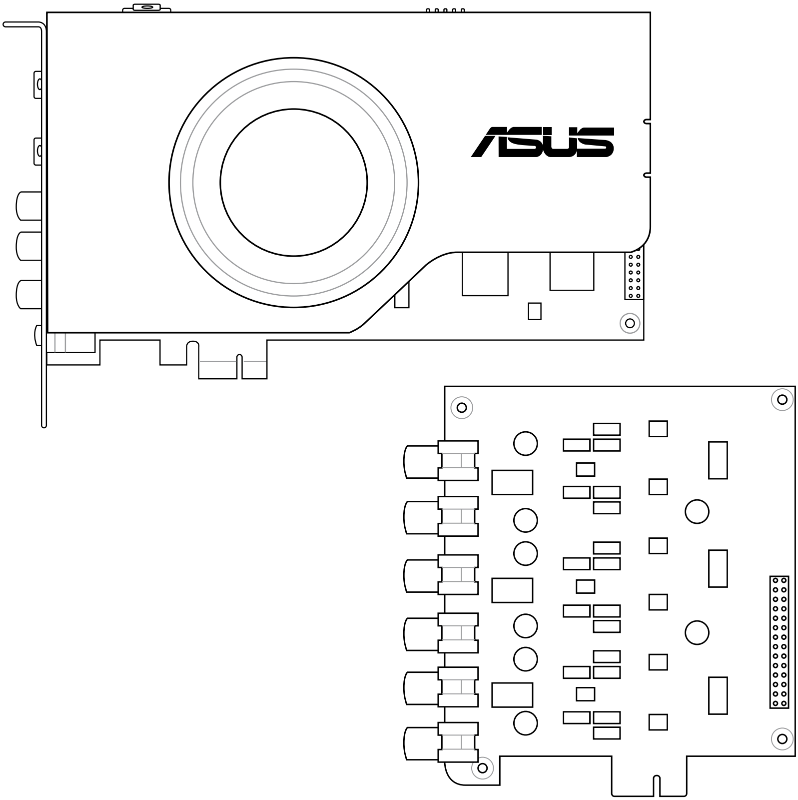
Xonar HDAV 1.3 (Deluxe)

Audio/Video enhanced combo card

User manual



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Notices

Federal Communications Commission Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with manufacturer's instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

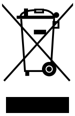
Canadian Department of Communications Statement

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

This class B digital apparatus complies with Canadian ICES-003.

Safety information

- Before installing the device on a motherboard, carefully read all the manuals that came with the package.
- To prevent electrical shock hazard or short circuits, switch off the power supply before installing the device on a motherboard or connecting any singal cables to the device.
- If the device is broken, do not try to fix it by yourself. Contact a qualified service technician or your retailer.
- Before using the product, make sure all cables are correctly connected. If you detect any damage, contact your dealer immediately.
- To avoid short circuits, keep paper clips, screws, and staples away from connectors, sockets and circuitry.
- Avoid dust, humidity, and temperature extremes. Do not place the product in any area where it may become wet.
- Place the product on a stable surface.
- If you encounter technical problems with the product, contact a qualified service technician or your retailer.



This symbol of the crossed out wheeled bin indicates that the product (electrical and electronic equipment) should not be placed in municipal waste. Check local regulations for disposal of electronic products.

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License

Dolby Master Studio driver is manufactured under license from Dolby Laboratories; DTS Connect driver is manufactured under license from Digital Theater Systems, Inc.

1. Introduction

1.1 Package contents

- ASUS Xonar HDAV 1.3 card
- ASUS Xonar H6 DAC extension board (ASUS Xonar HDAV 1.3 Deluxe only)
- H6 extension board cable x1
- HDMI cable x1
- DVI-to-HDMI cable x1
- Stereo RCA-to-3.5mm cable x4
- S/PDIF TOSLINK optical adapter x1
- Support CD (including ASUS Gamer OSD and RMAA V6.0.6 utilities)
- Quick installation guide
- TotalMedia Theatre Bluray Disc/HD-DVD Software Player (ArcSoft) CD

1.2 System requirements

- One DVI/HDMI graphics output
- One PCI Express 1.0 (or higher) compatible slot for the HDAV card, and one adjacent slot for the H6 DAC extension board
- One available 4-pin power cable from PC's power supply unit
- Microsoft® Windows® Vista/ XP(32/64bit)/ MCE2005
- Intel® Pentium® 4 1.4GHz or AMD Athlon 1400 CPU or faster CPU
- 256 MB DRAM system memory
- 100 MB available HDD space for driver installation package
- Blu-ray/HD-DVD ROM
- An HDMI-ready AV receiver or TV/monitor set (v.1.3 is better), home theater system, high-quality headphones, or powered analog speakers, to enjoy the ultra-high fidelity audio and video of the AV card

1.3 Specifications summary

Items	Description
Main Chipset	
Audio Processor	ASUS AV200 High-Definition Audio Processor (Max. 192KHz/24bit)
Video Processor	ASUS Splendid HD Video Processor
24-bit D-A Converter of Digital Sources:	TI Burr-Brown PCM1796 *1 on AV card; *3 on H6 DAC Extension Board (123dB SNR, Max. 192kHz/24bit)
24-bit A-D Converter for Analog Inputs:	Cirrus-Logic CS5381* 1 (120dB SNR, Max. 192kHz/24bit)
Output Audio OPAs	**Swappable DIP-typed** NS LM4562 *4 (Ultra low THD+N~ 0.00003%)
Analog Audio Performance	
Output Signal-to-Noise Ratio (A-Weighted):	Up to 120 dB for all channels
Input Signal-to-Noise Ratio (A-Weighted):	Up to 118 dB
Output Total Harmonic Distortion + Noise at 1KHz:	Up to 0.0004% (-108dB)
Input Total Harmonic Distortion + Noise at 1KHz:	Up to 0.0003% (-110dB)
Frequency Response (-3dB, 24-bit/96kHz input):	<10Hz to 46kHz
DAC Cross-talk at 1KHz:	Down to -130 dB
ADC Cross-talk at 1KHz:	Down to -115dB
Output/Input Full-Scale Voltage	-2.2 Vrms (6.22 Vp-p) for output -2.0 Vrms (5.65 Vp-p) for input
Bus Compatibility	
PCI Express	-PCI Express Rev.1.0a specification compatible -Max. full 2.5Gbps bandwidth per direction and optimized latency for high-definition audio processing -Compatible with X1, X4, X8, X16 PCI Express slots
Sample Rate and Resolution	
HDMI 1.3 Playback Sample Rate and Resolution	-44.1K/48K/96K/192KHz @ 16/24bit PCM -Dolby Digital /EX, DTS 5.1/ES pass-through -Dolby TrueHD, Dolby Digital Plus, and DTS-HD Master Audio pass-through upgradeable by TotalMedia player
Analog Playback Sample Rate and Resolution	44.1K/48K/96K/192KHz @ 16/24bit
Analog Recording Sample Rate and Resolution	44.1K/48K/96K/192KHz @ 16/24bit
S/PDIF Digital Output	-44.1K/48K/96K/192KHz @ 16/24bit PCM -Dolby Digital /EX, DTS 5.1/ES pass-through
S/PDIF Digital Input	44.1K/48K/96K/192KHz @ 16/24bit
I/O Ports	
HDMI Ports	HDMI-Out Type A *1 HDMI-In Type A *1
Analog Output Jack:	RCA jack *2 (Front L/R) RCA jack *6 (Side/Back L/R, Center, Subwoofer)
Analog Input Jack:	3.50mm mini jack *1 (Line-In/Mic-In shared)
Front-Panel Header	-For connecting headphone/front-out jack and mic-in jack on the front-panel of the PC case -Works with both Intel HD Audio and AC97 standard front-panels (2 x5 pins)
Other Line-level Analog Input (for CD-IN/TV Tuner):	Aux-In 4-pin header
Digital S/PDIF Output	Coaxial and high-bandwidth TOSLINK optical combo connector supports 192KHz/24bit
Digital S/PDIF Input	High-bandwidth TOSLINK optical connector (shared with Line-In/Mic-In jack) supports 192KHz/24bit

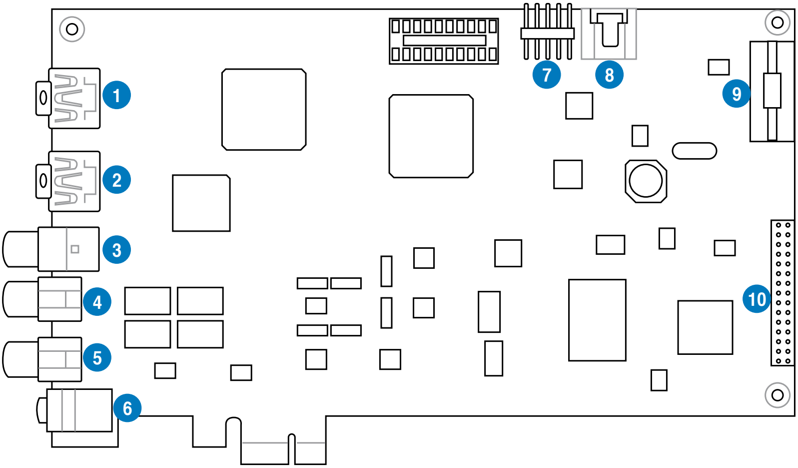
(continued on the next page)

Driver Features	
Operation System	Windows Vista/XP(32/64bit)/MCE2005
Dolby® Digital Live	Dolby Digital Live encodes any audio signal on PC in real-time to Dolby Digital (AC3) 5.1 surround sounds to your home theater environment through one single S/PDIF connection
Dolby® Headphone	Dolby Headphone technology allows users to listen to music, watch movies, or play games with the dramatic 5.1-channel surround or realistic 3D spacious effects through any set of stereo headphones.
Dolby® Virtual Speaker	Dolby Virtual Speaker technology simulates a highly realistic 5.1-speaker surround sound listening environment from as few as two speakers.
Dolby® Pro-Logic IIx	Dolby Pro-Logic II is the well-known technology to process any native stereo or 5.1-channel audio into a 6.1- or 7.1-channel output, creating a seamless, natural surround soundfield.
DTS® Connect Technologies	DTS® Connect contains DTS Interactive Encoder and DTS Neo:PC technologies. DTS Interactive encodes any sound on PC to "DTS 5.1 Surround" high bitrate digital stream to your home theater through S/PDIF connection. DTS Neo:PC can convert stereo audio into 5.1 or 7.1-channel high-fidelity surround sounds.
DirectSound3D Game EXtensions 2.0 & 1.0 (DS3D GX 2.0)	-DS3D GX 2.0 supports EAX gaming sound effects and DirectSound 3D hardware enhanced functions for more games on Windows Vista & XP. (DirectX/DirectSound 3D compatible) -DS3D GX 2.0 adds latest VocalFX voice effects for online gaming or chatting.
VocalFX™	Xonar DX provides VocalFX, the latest vocal effect technologies for gaming and VoIP, including: -VoiceEX: produces vivid environmental reverberation for your voice in EAX games -ChatEX: emulates different background environment effects when you chat online -Magic Voice: changes your voice pitch to different types (Monster/Cartoon…) for disguising your real voice or just for fun in online chatting
Smart Volume Normalizer	Normalizes the volume of all audio sources into a constant level and also enhances your 3D sound listening range and advantages in gaming
Acoustic Echo Cancellation (AEC)	Provides advanced Acoustic Echo Cancellation (AEC) for best voice conferencing quality in VOIP applications or online gaming
Karaoke Functions	Music Key-Shifting and Microphone Echo effects
FlexBass	Professional Bass Management/Enhancement system for small or large speakers
Xear 3D Virtual Speaker Shifter	Virtual 7.1 speaker positioning and shifting to adjust the optimum soundfield for your speaker placement
Other Effects	10-band Equalier/27 Environment Effects
3D Gaming Sound Engines/APIs	DirectSound3D® GX 2.0 & 1.0, EAX®2.0&1.0, DirectSound® HW, DirectSound SW, A3D®1.0, OpenAL generic modes, 128 3D sounds processing capability
ASIO 2.0 Driver Support:	44.1K/48K/96K/192KHz @ 16/24bit
Software Utility	
TotalMedia Theatre	7.1-ch Bluray disc/HD-DVD/DVD movie player supports HD video/audio decoding
ASUS Gamer OSD	On-screen-display utility for gaming
RightMark Audio Analyzer 6.0.6	Easy but powerful software intended for testing the quality of audio equipments
Accessories	
Accessories	-H6 Extension Board cable (for connecting HDAV card and extension board) *1 -DVI-to-HDMI cable *1 -Stereo RCA-to-3.5mm cable * 4 -S/PDIF TOSLINK optical adaptor *2

***Specifications are subject to change without notice.**

2. Hardware overview

2.1 Xonar HDAV card layout



No	Item	Description
1	**HDMI In port**	Connects to the DVI port of a graphics card using the bundled HDMI-to-DVI cable for DVI signal transmission, or connects to the HDMI Out port of an HDMI graphics card using an HDMI cable.
2	**HDMI Out port**	Connects to a device with HDMI support.
3	**S/PDIF Out port**	Coaxial and optical TOSLINK combo digital output port. Connects to an external digital decoder or digital speaker systems, Home Theater systems, AV receivers for outputting digital audio including PCM, Dolby Digital, DTS, WMA-Pro, etc.
4	**Front Right Out port**	Connect the Right audio cable (red) from your 2/2.1 channel speakers to this port. For multi-channel speaker systems, connects to the Front Right In port on the powered speakers.
5	**Front Left Out port**	Connect the Left audio cable (white) from your 2/2.1 channel speakers to this port. For multi-channel speaker systems, connects to the Front Right In port on the powered speakers.
6	**Microphone In port**	Connect your external PC microphone to this 3.5mm port for voice input. Built-in high-quality Microphone pre-amplifier.
6	**Line In port**	Connect analog devices like MP3 players, CD players, music synthesizers and other line-level sound sources to this 3.5mm port for audio recording or processing. (Through Ultra-high fidelity 115dB SNR A-D converter)

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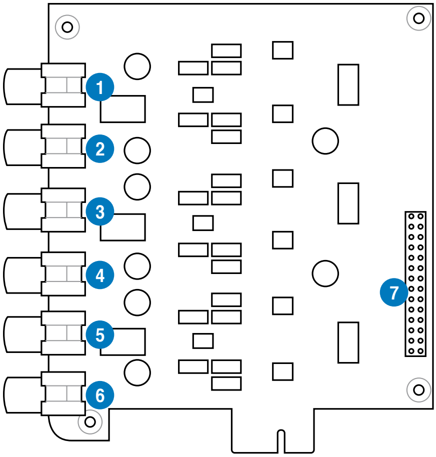
6	**S/PDIF In port**	Optical TOSLINK digital input jack. Connects to external digital audio sources such as MD players, CD players, or DVD players, for audio recording or loopback.
7	**Front panel audio header**	Connect one end of the front panel audio cable to the front panel audio header on the Xonar HDAV 1.3 card, with the other end to the chassis-mounted front panel audio I/O module.
8	**Aux Input Header**	Usually connects to the Analog Audio output of TV tuner card or other sound source inside your PC system. (To monitor your TV tuner card's audio from this Aux-In, you must enable the "monitor" function for Aux-In in the Xonar HDAV Center software's recording mixer.)
9	**Power Connector**	Connects to the power cable of your power supply.
10	**Bridge connector**	Connects to the extension board with the bundled bridge cable.

2.2 H6 DAC extension board layout



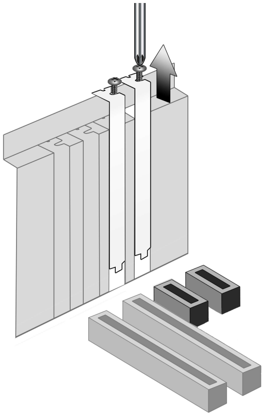
No	Item	Description
1	Right Side Surround Out port	Connects to the surround channel input on 4/5.1/6.1/7.1 powered analog speakers.
2	Left Side Surround Out port	Connects to the surround channel input on 4/5.1/6.1/7.1 powered analog speakers.
3	Center Out port	Connects to the front center input on 5.1/6.1/7.1 powered analog speakers.
4	Subwoofer Out port	Connects to the front subwoofer input on 6.1/7.1 powered analog speakers.
5	Right Back Surround Out port	Connects to the Right Back Surround input on 6.1/7.1 powered analog speakers.
6	Left Back Surround Out port	Connects to the Left Back Surround input on 6.1/7.1 powered analog speakers.
7	Bridge connector	Connects to the Xonar HDAV card with the bundled H6 extension board cable.

3. Installing the hardware

3.1 Preparing your computer

Before you proceed with the following installation steps, it is recommended that you disable the onboard audio device in the BIOS settings, or uninstall any other sound cards on your PC. (For BIOS setting or uninstallation of other sound cards, refer to the user manuals of your motherboard and sound card.)

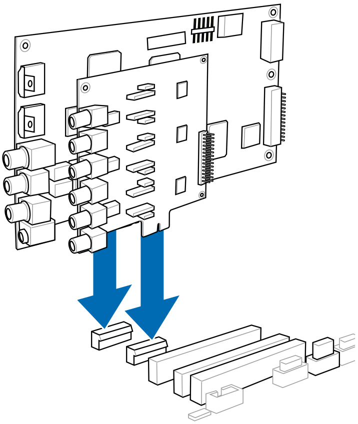
1. Power off your computer and disconnect the power cord.
2. Open the computer chassis.
3. Remove the metal brackets from one unused PCI Express x1 slot for the Xonar HDAV card and its adjacent slot for the H6 DAC extension board.



3.2 Installing the Xonar HDAV 1.3 card

Securing the Xonar HDAV card and the H6 DAC extension board:

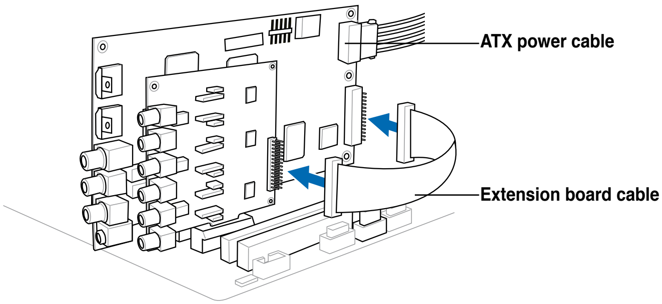
1. Carefully insert the Xonar HDAV card into the PCI Express x1 slot and the extension board into the other adjacent slot. Ensure both the Xonar HDAV card and the extension board sit properly in place.
2. Secure both the Xonar HDAV card and the extension board with screws or metal brackets.



Connecting cables:

1. Using the extension board cable, connect the Xonar HDAV card to the extension board.
2. Connect a 4-pin ATX power cable to the ATX power connector on the card.

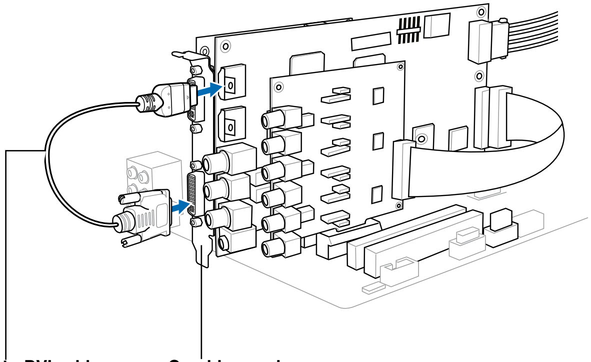
> The Xonar HDAV 1.3 card requires additional power to work. Ensure that you connect the ATX power cable to the card to provide ample power.



Connecting to a discrete graphics card:

1. Install a discrete graphics card on your motherboard.
2. Using the bundled HDMI-to-DVI cable, connect the DVI Out port of the graphics card to the HDMI In port of the Xonar HDAV 1.3 card.

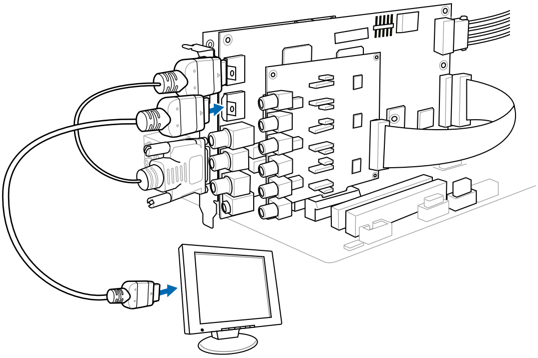
> If you are using an HDMI graphics card, connect your graphics card with the Xonar HDAV 1.3 card using the HDMI cable that comes with your graphics card package.



Connecting to an HDMI display device:

Using an HDMI cable, connect one end to the HDMI out port of the Xonar HDAV card and the other end to the HDMI display device.

> - Ensure that you have properly connected the DVI-to-HDMI cable for normal video signal transmission. Otherwise, there might be no display on your HDMI display device.
> - Some LCD TVs with HDMI output do not support PC resolutions and may lose audio output, excepting on following video resolutions: 480i/p, 720p, and 1080i/p.



3.3 Connecting to a TV tuner card

1. If you have a traditional PCI or PCI Express TV tuner card on your PC, you may need to connect it to the Xonar HDAV 1.3 card to send the tuner card's sound to your PC speakers.
2. Secure the PCI/PCI Express TV tuner card and screw it into the back-panel.
3. Connect the audio output header from the TV tuner card to the Aux-In header of the Xonar HDAV 1.3 card.

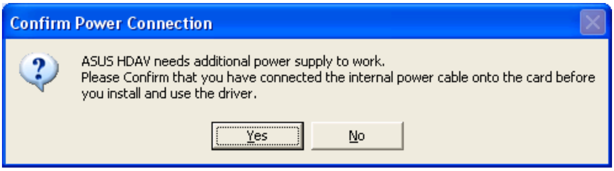
For optimum TV audio quality, Xonar HDAV uses ADC recording to digitize the signal and loops it back to DAC playback. Select Aux-In as the recording source in the Xonar HDAV Center's recording mixer and enable the monitoring button to pass this signal to the audio output. Using this setup, you can even turn on sound effects such as Pro-Logic IIx to expand the stereo TV audio to 5.1 or 7.1 channel surround sound. TV audio on your PC will become even better than on your TV set.

4. Installing software

4.1 Installing the card driver

Ensure that you have installed the VGA card driver before installing the Xonar HDAV driver. Otherwise, driver installation error may occur.

1. After you have installed the Xonar HDAV card, turn on your computer. Windows® automatically detects the HDAV card and searches for device drivers. When prompted for the drivers, click **Cancel**.
2. Insert the support CD into the optical drive. If Autorun is enabled in your system, the setup starts automatically. If not, run **setup.exe** from your support CD.
3. The installation program will remind you to make sure you have connected the additional power cable from your power supply unit to the card. If the power cable is not connected properly, the card will not work at all. If it has not been done, turn off the computer to install the power cable before you go on the installation process.



4. Follow the instructions on the screen to complete the installation. Read the “END USER LICENCE AGREEMENT” in the process and make sure you understand and accept it before you continue the installation. When the installation finishes, you may be prompted to restart your computer. You can choose to restart the computer later if desired.

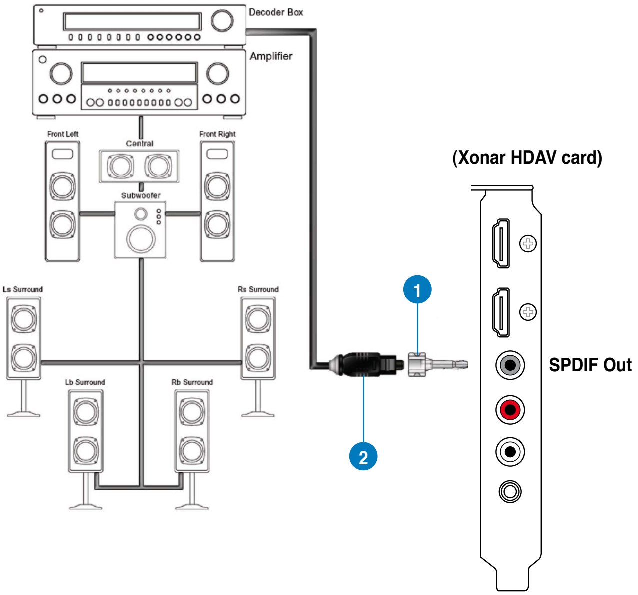
4.2 Installing the TotalMedia Theatre software

1. Insert the TotalMedia Theatre installation CD into the optical drive. If Autorun is enabled in your system, the setup starts automatically. If not, run **setup.exe** from the installation CD.
2. Follow the onscreen instructions to complete the installation.
3. When prompted, enter the license key located on the installation CD sleeve.

5. Connecting speakers and peripherals

5.1 Connecting digital speaker systems (Home Theater)

The Xonar HDAV 1.3 supports Dolby Digital Live and DTS Interactive technologies, which transcode any audio, including games and music, into industry-standard Dolby Digital or DTS 5.1 surround bit-streams. This makes playback through your home theater system possible, creating an immersive and impressive cinema surround sound experience. A single digital cable connection can carry high-quality Dolby Digital or DTS 5.1 digital audio from any of your PC audio sources to any digital speakers or AV Receivers with Dolby Digital or DTS 5.1 decoding capabilities.

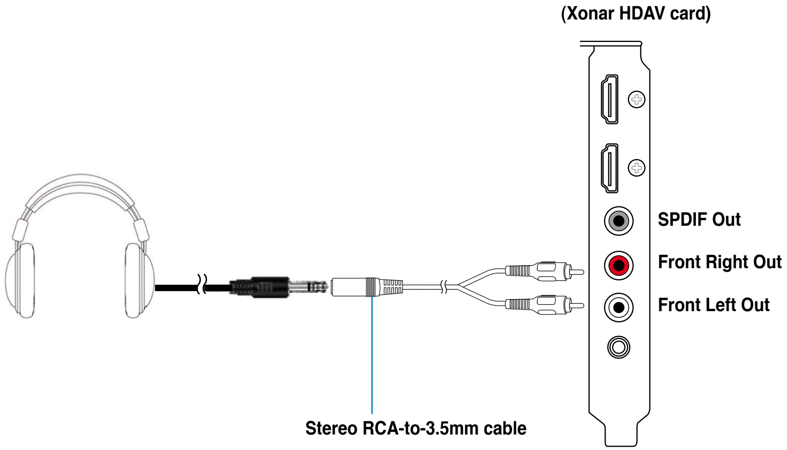


No	Item	Description
1	Optical adapter	Plug the optical TOSLINK adapter into the S/PDIF-Out combo connector.
2	Optical cable	Connect your decoder's S/PDIF-In port to the optical adapter with the TOSLINK optical cable.

You can also use a coaxial cable for a S/PDIF connection. Just plug the coaxial RCA male connector to the S/PDIF-Out combo jack and connect the other end into the coaxial S/PDIF input on your decoder.

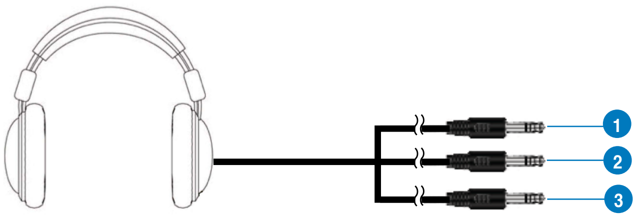
5.2 Connecting Headphones

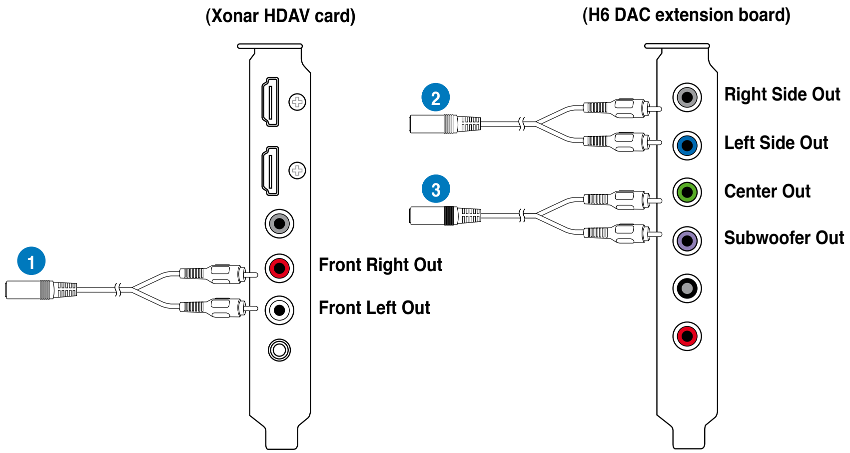
5.2.1 Connecting Stereo Headphones



The Left/Right Front Out ports have a built-in high-quality amplifier to drive headphones. Connect your stereo headphones to the bundled stereo RCA-to-3.5mm cable, and then connect the Left/Right ends to the to Front Left/Right Out ports on the Xonar HDAV card.

5.2.2 Connecting 5.1 channel Headphones

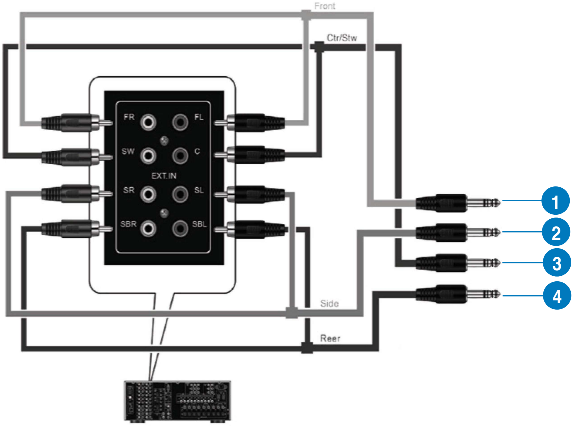




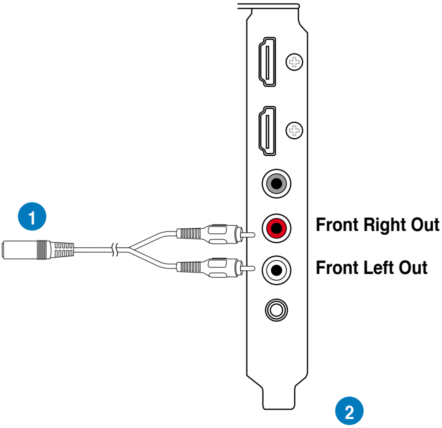
No	Item	Description
1	Front Left/Right Out	Connect the front-channel 3.5mm plug of your 5.1 headphones to the bundled stereo RCA-to-3.5mm cable, and then connect the Left/Right ends to the to Front Left/Right Out ports on the Xonar HDAV card.
2	Left/Right Side Surround Out	Connect the side surround-channel 3.5mm plug of your 5.1 headphones to the bundled stereo RCA-to-3.5mm cable, and then connect the Left/Right ends to the to Left/Right Side Out ports on the extension board.
3	Center/Subwoofer Out	Connect the Center/Bass-channel 3.5mm plug of your 5.1 headphones to the bundled stereo RCA-to-3.5mm cable, and then connect the Left/Right ends to the to Center/Subwooder Out ports on the extension board.

5.3 Connecting Analog Speaker Systems

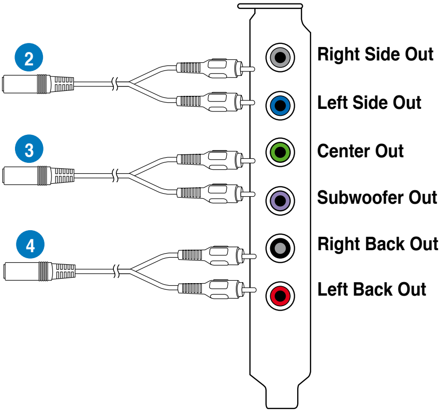
5.3.1 Connecting Analog Power Amplifier



(Xonar HDAV card)



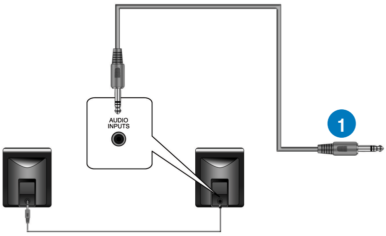
(H6 DAC extension board)



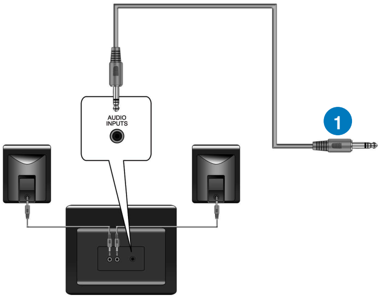
No	Item	Description
1	Front Left/Right Out	Connects to the “left front” and “right front” input ports of the analog amplifier with the mini-jack-to-RCA cable, and then connect the other end to the bundled stereo RCA-to-3.5mm cable. Finally, connect the Left/Right ends to the Front Left/ Right Out ports on the Xonar HDAV card.
2	Left/Right Side Surround Out	Connects to the “left surround” and “right surround” input ports of the analog amplifier with the mini-jack-to-RCA cable, and then connect the other end to the bundled stereo RCA-to-3.5mm cable. Finally, connect the Left/Right ends to the Left/Right Side Out ports on the extension board.
3	Center/Subwoofer	Connects to the “Center” and “subwoofer” input ports of the analog amplifier with the mini-jack-to-RCA cable, and then connect the other end to the bundled stereo RCA-to-3.5mm cable. Finally, connect the Left/Right ends to the to Center/ Subwoofer Out ports on the extension board.
4	Left/Right Back Surround Out	Connects to the “left back” and “right back” input ports of the analog amplifier with the mini-jack-to-RCA cable, and then connect the other end to the bundled stereo RCA-to-3.5mm cable. Finally, connect the Left/Right ends to the to Left/Right Back Out ports on the extension board.

5.3.2 Connecting 2/2.1 Channel Speakers

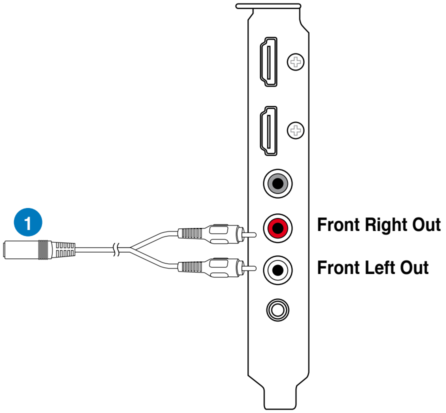
2 Speakers



2.1 Speakers



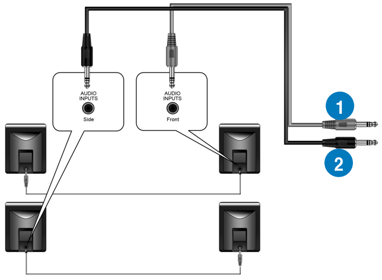
(Xonar HDAV card)



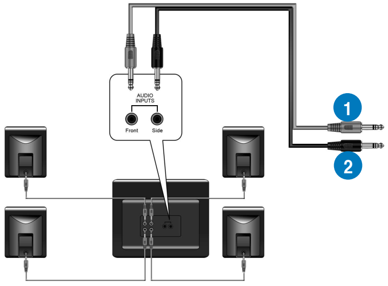
No	Item	Description
1	**Front Left/Right Out**	The Left/Right Front Out ports have a built-in high-quality amplifier to drive headphones. Connect the 2/2.1 speaker set's 3.5mm plug to the bundled stereo RCA-to-3.5mm cable, and then connect the Left/Right ends to the Front Left/Right Out ports on the Xonar HDAV card.

5.3.3 Connecting 4/4.1 Channel Speakers

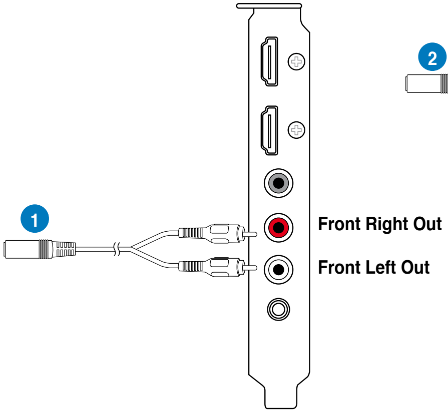
4 Speakers



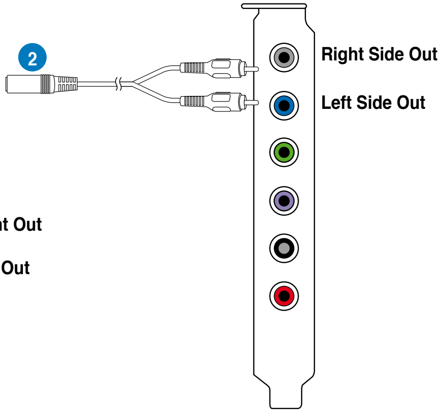
4.1 Speakers



(Xonar HDAV card)



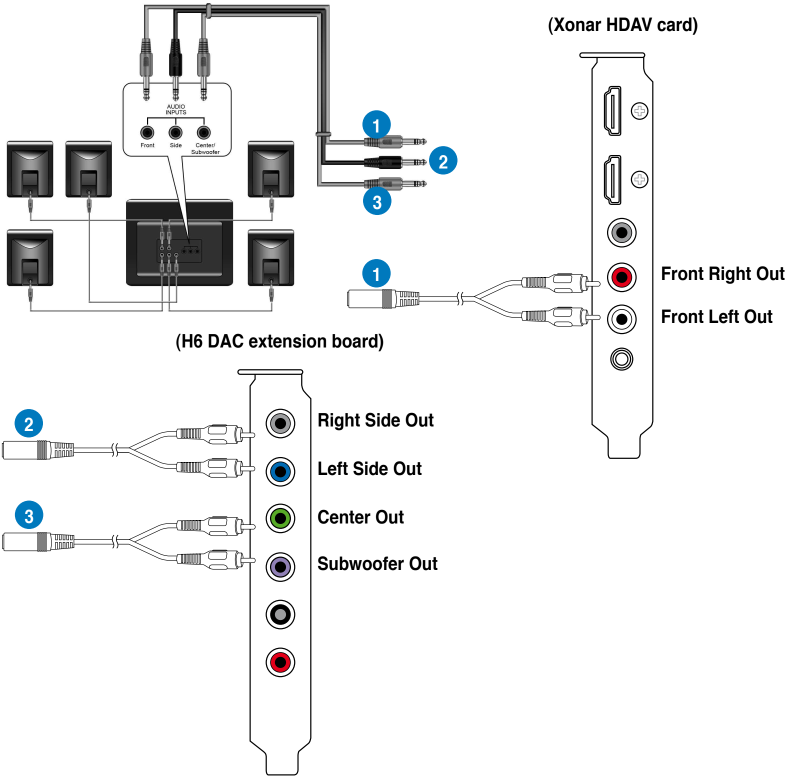
(H6 DAC extension board)



No	Item	Description
1	Front Left/Right Out	Connects to the Front input port of the 4/4.1 speakers with the mini-jack cable, and then connect the other end to the bundled stereo RCA-to-3.5mm cable. Finally, connect the Left/Right ends to the Front Left/Right Out ports on the extension board.
2	Left/Right Side Surround Out	Connects to the Side Surround input port of the 4/4.1 speakers with the mini-jack cable, and then connect the other end to the bundled stereo RCA-to-3.5mm cable. Finally, connect the Left/Right ends to the Left/Right Side Out ports on the extension board.

5.3.4 Connecting 5.1 Channel Speakers

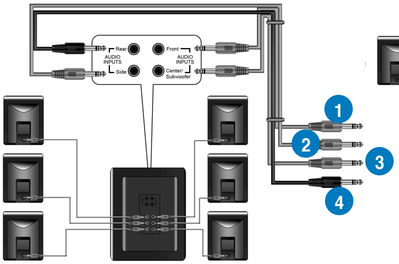
5.1 Speakers



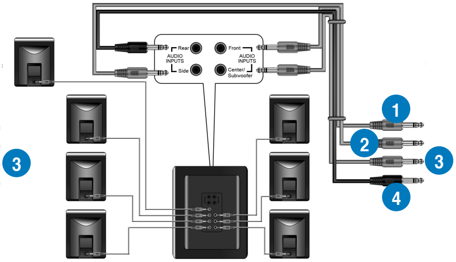
No	Item	Description
1	Front Left/Right Out	Connects to the Front input port of the 5.1 speakers with the mini-jack cable, and then connect the other end to the bundled stereo RCA-to-3.5mm cable. Finally, connect the Left/Right ends to the Front Left/Right Out ports on the Xonar HDAV card.
2	Left/Right Side Surround Out	Connects to the Side Surround input port of the 5.1 speakers with the mini-jack cable, and then connect the other end to the bundled stereo RCA-to-3.5mm cable. Finally, connect the Left/Right ends to the Left/Right Side Out ports on the extension board.
3	Center/Subwoofer Out	Connects to the Center/Subwoofer input port of the 5.1 speakers with the mini-jack cable, and then connect the other end to the bundled stereo RCA-to-3.5mm cable. Finally, connect the Left/Right ends to the Center/Subwoofer Out ports on the extension board.

5.3.5 Connecting 6.1 / 7.1 Channel Speakers

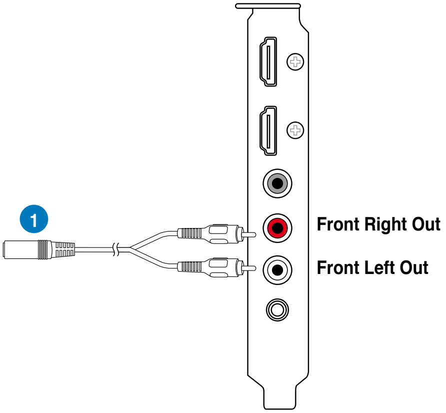
6.1 Speakers



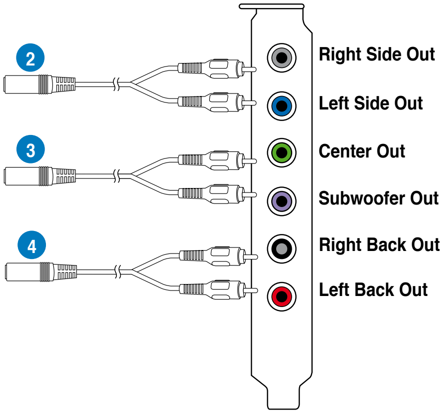
7.1 Speakers



(Xonar HDAV card)

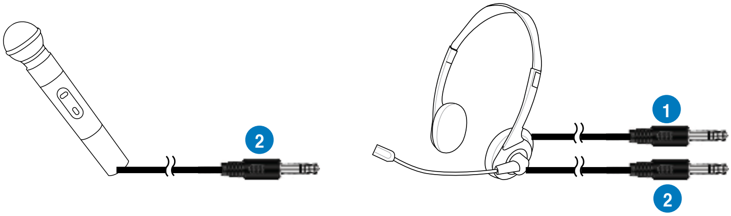


(H6 DAC extension board)

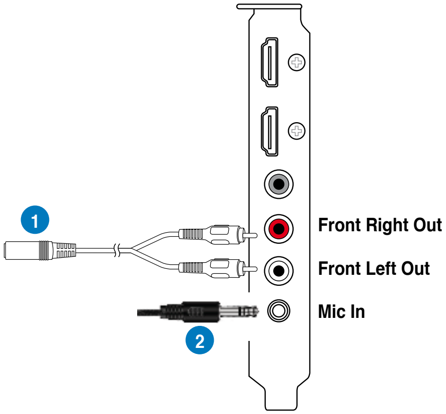


No	Item	Description
1	Front Left/Right Out	Connects to the Front input port of the 6.1/7.1 speakers with the mini-jack cable, and then connect the other end to the bundled stereo RCA-to-3.5mm cable. Finally, connect the Left/Right ends to the Front Left/Right Out ports on the Xonar HDAV card.
2	Left/Right Side Surround Out	Connects to the Side Surround input port of the 6.1/7.1 speakers with the mini-jack cable, and then connect the other end to the bundled stereo RCA-to-3.5mm cable. Finally, connect the Left/Right ends to the Left/Right Side Out ports on the extension board.
3	Center/Subwoofer	Connects to the Center/Subwoofer input port of the 6.1/7.1 speakers with the mini-jack cable, and then connect the other end to the bundled stereo RCA-to-3.5mm cable. Finally, connect the Left/Right ends to the Center/Subwoofer Out ports on the extension board.
4	Left/Right Back Surround Out	Connects to the Back Surround input port of the 6.1/7.1 speakers with the mini-jack cable, and then connect the other end to the bundled stereo RCA-to-3.5mm cable. Finally, connect the Left/Right ends to the Left/Right Back Out ports on the extension board.

5.4 Connecting Microphone

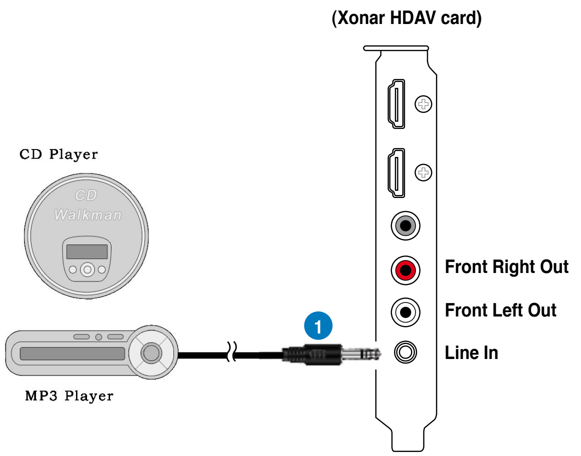


(Xonar HDAV card)



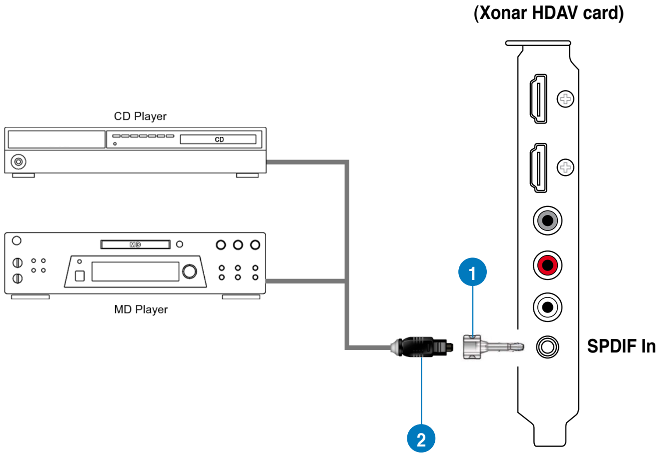
No	Item	Description
	Front Left/Right Out port/Headphone port	Connect the headphone's 3.5mm plug to the bundled stereo RCA-to-3.5mm cable, and then connect the Left/Right ends to the to Front Left/Right Out ports on the Xonar HDAV card.
1	**Microphone Input Jack**	Connect the microphone's 3.5mm plug to the Mic-In port on the Xonar HDAV card for voice communication, recording, or karaoke.

5.5 Connecting Line-In Audio Sources



No	Item	Description
1	Line Input Jack	Connect the 3.5mm plug of the CD/MP3 Player or any other Line level analog audio sources into this Line-In jack for sound recording or real-time Dolby/DTS sound processing through the Monitoring path (See the “Mixer” section of the driver guide).

5.6 Connecting Digital Audio Sources



No	Item	Description
1	Optical adapter	Plug the optical TOSLINK adapter into the S/PDIF-In combo connector
2	Optical cable	Connect your MD/CD/DVD player's S/PDIF out port to the optical adapter with the TOSLINK optical cable

You can also use a coaxial cable for a S/PDIF digital connection. Just plug the coaxial RCA male connector to the S/PDIF-In combo jack and connect the other end into the coaxial S/PDIF output on the player.

6. Xonar HDAV Center

6.1 Xonar HDAV Center GUI

1. After the driver installation is complete and your computer has been rebooted, you will find the Xonar HDAV Center's icon in the system tray on the bottom right-hand corner of the screen. Double click this icon to open the Xonar HDAV Center utility.

If the icon could not be found in the system tray, launch the Xonar HDAV Center from the Windows desktop by clicking **Start > All Programs > ASUS Xonar HDAV > Xonar HDAV Center**.

2. The Xonar HDAV Center is the Graphic User Interface (GUI) for the Xonar HDAV 1.3 driver. You can control the functions and features of the Xonar HDAV 1.3 driver on the Xonar HDAV Center. The following picture shows a basic overview of the Xonar HDAV Center. The following sections of this manual will describe its functions in more detail.

No	Item	Description
1	Support link	Clicking this button will lead you to the ASUS official website.
2	Display Area	This display area shows the 10-band signal meter, volume level, and the status of the Dolby/DTS technologies, EQ, and DSP modes. Note: this area just displays information, but is not used to alter settings.
3	HDMI mode	Click this button when you connect the Xonar HDAV 1.3 card to an HDMI device.
4	Sound Card mode	Click this button when you connect the Xonar HDAV 1.3 card to powered analog speakers or digital home theater systems, etc.
5	Setting Menu Panel	This panel gives access to setting tabs, including Main Settings, Mixer/volume, Effects, Karaoke/MagicVoice, and FlexBass. (see the following details)
6	Information icon	Clicking this icon will pop up driver's Information window.
7	Menu Open/Close	Clicking this button will move the display area and reveal the configuration area below. Clicking it again will move the display area back down.
8	Audio/Video configuration switch	Click the corresponding switch to configure the related settings while using the audio/video features.
9	Master Volume	This rotary knob controls the master playback volume. Drag the small circle inside it to change the volume level.
10	Mute Button	Click this button to mute audio playback; it will display a red light when playback is muted.
11	SVN Button	Click this button to enable the "Smart Volume Normalization" feature for constant volume from all playback sources. It will display a blue light when enabled.
12	DSP Mode	These 4 buttons give access to quick sound effects combinations for Music, Games, DVD Video, and effect-free (Hi-Fi) modes.

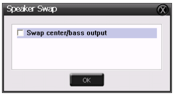
6.2 Audio-Main Setting

6.2.1 HDMI Out mode / Analog Out mode

Select the appropriate mode corresponding to the device you connect the Xonar HDAV 1.3 card to.

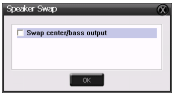
HDMI Out / Speaker Test / Speaker Swap

Click the HDMI mode button and configure the related settings when you connect the Xonar HDAV 1.3 card to an HDMI device.

No	Item	Description
1	**HDMI Out**	The HDMI Out setting is used to match your actual speaker setting, such as headphones, 2 speakers (or 2.1), 4 speakers (or 4.1), 5.1 speakers, 7.1 speakers. Xonar HDAV will play the channels and does the proper 3D/Dolby sound processing accordingly. Please select the correct speaker type for your connected speakers. HDMI Out also allows you to select one of the following two formats: -Dolby Digital Live real-time 5.1ch encoding -DTS Interactive real-time 5.1ch encoding
2	**Speaker Test**	Click this button to show the speaker test window in the right pane. Click the “play” button to test each speaker one by one or click each speaker manually to test.
3	**Speaker Swap**	Clicking this button will pop up an advanced setting window to allow you to: –Swap center/bass outputs for 5.1/7.1-speaker set ups -Swap Side/Surroud outputs for 7.1-speaker set ups Check the box if your speakers are outputting the incorrect channel. Otherwise, leave them blank. 

Analog Out / Speaker Test / Speaker Swap

Click the Analog mode button and configure the related settings when you connect the Xonar HDAV 1.3 card to powered analog speakers or digital home theater systems, etc.

No	Item	Description
1	**Analog Out**	The Analog Out setting is used to match your actual speaker setting, such as headphones, 2 speakers (or 2.1), 4 speakers (or 4.1), 5.1 speakers, and 7.1 speakers. Xonar HDAV 1.3 will play the channels and do the proper 3D/Dolby/DTS sound processing accordingly. Please select the correct speaker type for your connected speakers.
2	**Speaker Test**	Click this button to show the speaker test window in the right pane. Click the “play” button to test each speaker one by one or click each speaker manually to test. Note: the Speaker Test function is not available on Windows Vista due to a limitation in its audio stack.
3	**Speaker Swap**	Clicking this button will pop up an advanced setting window to allow you to: –Swap center/bass outputs for 5.1/7.1-speaker set ups -Swap Side/Surroud outputs for 7.1-speaker set ups Check the box if your speakers are outputting the incorrect channel. Otherwise, leave them blank. 

6.2.2 Sample Rate

The sample rate determines the number of audio samples per second that the Digital-to-Analog Converters (DAC) and S/PDIF digital interface will output. The Xonar HDAV 1.3 card can support sample rates up to 192KHz (44.1K, 48K, 96K, 192KHz). Usually audio CDs and MP3 files are 44.1KHz; DVD-Video uses 48KHz; DVD-Audio or other HD media may contain 96KHz or 192KHz high-definition audio content. Please select the corresponding sample rate for your playback sources to get the best audio fidelity. Even if your setting differs from the audio source's sample rate, the Xonar HDAV 1.3 engine will do super high fidelity sample-rate-conversion with a double floating-point filter, which can reduce total harmonic distortion (THD+N) by -140dB.

No	Item	Description
1	**Sample Rate**	Select the sample rate that corresponds to (or exceeds that of) your playback sources, for optimal audio fidelity. The Xonar HDAV 1.3 card supports sample rates up to 192KHz (44.1K, 48K, 96K, 192KHz). Typical values: -Audio CD, MP3, WMA, Wave files are 44.1KHz; -The audio of DVD-Video is 48KHz; -DVD-Audio or other HD media may contain 96KHz or 192KHz high-definition audio content.

6.2.3 SPDIF Out/DDL/DTS Interactive

Xonar HDAV 1.3 is capable of outputting Dolby Digital Live and DTS Interactive, which are real-time encoders that transcode any audio, including games and music, into industry-standard Dolby Digital or DTS 5.1 bit-streams on-the-fly. This is ideal for playback through a home theater system, creating an immersive and impressive cinema surround sound experience. It enables a single digital connection to carry high quality Dolby Digital or DTS 5.1 surround audio from your PC to digital speakers and AV Receivers.

No	Item	Description
1	**S/PDIF Out enable/ disable**	Click this check box to enable S/PDIF output.
2	**S/PDIF Output Formats/Functions**	This pull-down menu allows you to select one of the following four formats: -PCM (Pulse Code Modulation, which is a typical raw audio data format.) -Dolby Digital Live real-time 5.1ch encoding -DTS Interactive real-time 5.1ch encoding -S/PDIF In Loopback to output (typically useful for coaxial/ optical connection transformation)
3	**Dobly Digital Live advanced upmixing option**	This advanced setting will automatically upmix stereo (2ch) content to 5.1 channel surround with Dolby Pro-Logic II when using Dolby Digital Live output.

6.2.4 Audio Channels (For Vista only)

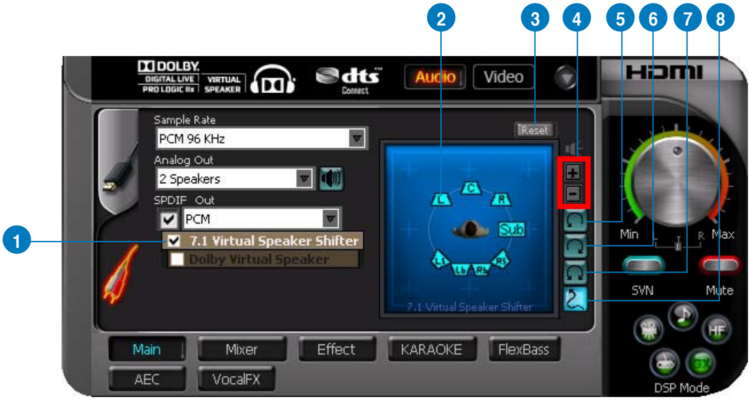
This setting only appears in Windows Vista. Vista will deliver the audio channels to the audio driver according to this setting, no matter what the original audio content is or how many channels they have. Therefore, you need to set this in accordance with your audio content before you play it. Please note that this setting is synchronized with Vista's system speaker configuration and changing the setting during playback will cease the audio playback program. You may have to restart the program after the change. It's recommended that you close all playing programs before you change the setting.

No	Item	Description
1	**Audio Channels**	Here are some typical suggestions: -MP3, WMA, AAC, CD, VCD, 2D games => 2 channels -DVD-Video with Dolby Digtial or DTS 5.1 => 6 channels -DVD-Video with Dolby Digtial EX or DTS ES => 8 channels -3D games => 8 channels

6.2.5 7.1 Virtual Speaker Shifter

The 7.1 Virtual Speaker Shifter has the following major features:

- Expanding/upmixing audio to 7.1-channel surround sound
- Virtualizing 7.1 surround sound over any set of speakers
- Shiftable virtual speaker positioning allows you to adjust the best sound field easily without moving physical speakers and wires



No	Item	Description
1	**Shifter enable/disable**	Click this check box to enable the 7.1 Virtual Speaker Shifter. Clicking the text bar will switch the right window to the Speaker Shifter page for manual adjustments.
2	**Drag speaker or listener**	You can drag each speaker or listener to a different relative position "virtually" using only your mouse. The Xonar HDAV 1.3 card will process it and virtualize each speaker position in real-time. The Subwoofer has no directional sounds, and hence can be moved only closer or further away.
3	**Reset**	Reset all Speaker Shifter settings to the defaults.
4	**Increase/decrease volume**	Click + to increase volume (move speakers closer); click – to decrease volume (move speakers further away)
5	**Counter-clockwise**	Make all speakers (except Subwoofer) rotate counter-clockwise
6	**Clockwise**	Make all speakers (except Subwoofer) rotate clockwise
7	**Manual Rotation**	Manually drag and rotate all speakers (except Subwoofer)
8	**Manual Drag Mode**	This is the default mode that allows you to manually drag each speaker or the listener with your mouse.

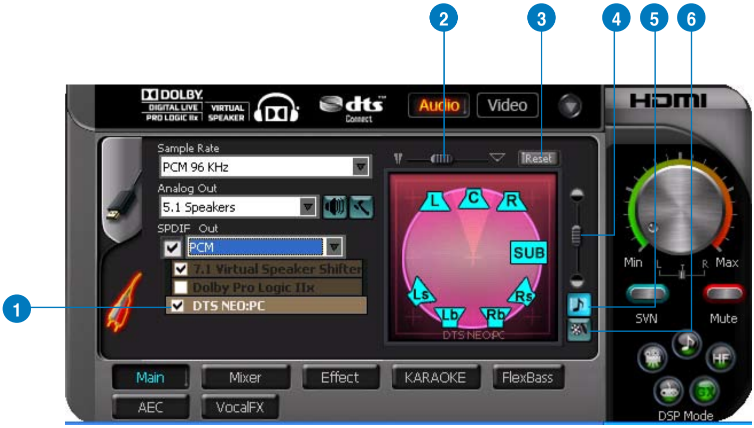
6.2.6 Dolby Pro-Logic IIx

Dolby Pro-Logic IIx is a 7.1 surround upmixing technology and is widely used in home theater systems, TVs, game consoles, and car audio systems. It can expand stereo audio, such as MP3, CD, and TV programs into immersive 5.1 or 7.1-channel surround.

No	Item	Description
1	**Dolby Pro-Logic IIx enable/disable**	Click this check box to enable Dolby Pro-Logic IIx. Clicking the text bar will switch the right window to the Pro-Logic IIx page for manual adjustments.
2	**Center Width**	This parameter is used to set the spread of the center, mainly for the vocal signals of songs and music. Drag the scroll bar to the left to centralize the vocal signal. Drag to the right side to widen the vocal sound range.
3	**Reset**	Reset all settings to the defaults.
4	**Dimension**	The dimension parameter fades sounds to the front or rear of the listener.
5	**Music Mode**	Music mode is the default mode for regular music playback. In this mode, you can adjust the Center Width and Dimension parameters.
6	**Movie Mode**	Movie mode is a preset optimized for movie audio.

6.2.7 DTS Neo:PC

DTS Neo:PC is another 2-to-7.1 channel upmixing technology, using a sophisticated algorithm from DTS Labs. It can spread stereo audio such as MP3, CD, and TV programs into an immersive 5.1 or 7.1-channel surround sound environment.



No	Item	Description
1	**DTS Neo:PC enable/ disable**	Click this check box to enable DTS Neo:PC. Clicking the text bar will switch the right window to a DTS Neo:PC page for manual adjustments.
2	**Center Width**	This parameter is used to set the spread of the center, mainly for the vocal signals of songs and music. Drag the scroll bar to the left to centralize the vocal signal. Drag to the right side to widen the vocal sound range.
3	**Reset**	Reset all settings to the defaults.
4	**Dimension**	The dimension parameter fades sounds to the front or rear of the listener.
5	**Music Mode**	Music mode is the default mode for regular music playback. In this mode, you can adjust the Center Width and Dimension parameters.
6	**Movie Mode**	Movie mode is a preset optimized for movie audio.

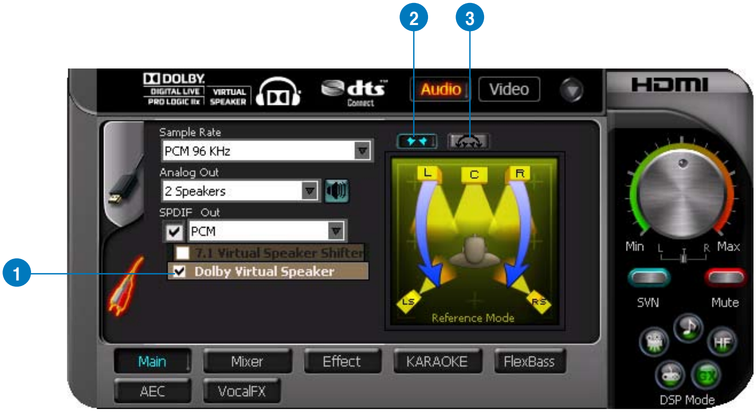
6.2.8 Dolby Headphone

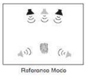
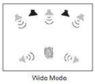
Dolby Headphone creates a stunning multi-channel surround experience over ordinary stereo headphones for playing 3D games, watching 5.1 DVD movies, and listening to music. Dolby Headphone produces surround sound cues so realistic that you will believe you are listening over speakers in a well-controlled studio. Dolby Headphone can also improve listening comfort and reduce "listener fatigue" from long listening over headphones.

No	Item	Description
1	Dolby Headphone enable/disable	Click this check box to enable Dolby Headphone. Clicking the text bar will switch the right window to Dolby Headphone page for manual adjusting.
2	DH1	Dolby Headphone (DH) provides three room filters that may be used with any type of audio. They differ in the sense of the “spatial dimension” they impart. DH1—Reference Room: Small, acoustically damped room.
3	DH2	DH2—Livelier Room: More acoustically live than DH1
4	DH3	DH3—Larger Room: Larger room than DH1; more distant and diffused effect.

6.2.9 Dolby Virtual Speaker

Dolby Virtual Speaker technology simulates a 5.1-speaker surround sound listening environment from as few as two speakers. Dolby Virtual Speaker also creates a wider two-channel environment during playback of stereo CDs and MP3 content, and when combined with Dolby Pro Logic® II processing, delivers a virtual 5.1-channel surround listening experience from any high-quality stereo source.



No	Item	Description
1	**Dolby Virtual Speaker enable/disable**	Click this check box to enable Dolby Virtual Speaker. Clicking the text bar will switch the right window to a Dolby Virtual Speaker page for manual adjusting.
2	**Reference Mode**	Dolby Virtual Speaker provides two modes of virtualization: The first is Reference mode, which virtualizes the missing speakers as in the following picture. 
3	**Wide Mode**	Wide mode virtualizes the necessary speakers and enhances the surround experience as in the following picture. 

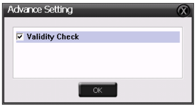
6.3 Mixer/Volume

The mixer page is designed to control the volume for playback and recording on the Xonar HDAV 1.3. In addition, the Xonar HDAV 1.3 also provides a high-quality digital monitoring function for hearing the recorded audio from the speakers. You can also process the input signals with all playback sound effects such as Dolby and DTS technologies.

6.3.1 Playback Volume

No	Item	Description
1	**Playback volume tab**	Click this button to show the playback volume page.
2	**Left / Right balance**	The horizontal slider controls the volume between the left and right channels.
3	**Volume slider**	Drag this slider down to decrease the volume; drag it up to increase the volume. The tool-tip reveals the percentage number from 1 to 100 in terms of the full scale level.
4	**Mute button**	Click this button to mute the audio channel; click this button again to restore the audio output.
5	**Source / path name**	This shows the source name for each volume control slider, including: - WAVE: All digital audio sources except MIDI files - SW: Software Synthesizer; control the playback volume of the MIDI files - CD: CD-ROM digital playback (CD-DA) volume control - LEFT, RIGHT…: the volume control for each speaker/ channel Note: Windows® Vista doesn't support WAVE, Synthesizer and CD-In volume controls.
6	**Reset**	Reset all volume controls to the default settings

6.3.2 Recording/Monitoring Volume

No	Item	Description
1	**Recording Volume Tab**	Click this button to show the recording volume page.
2	**Left/Right balance**	This horizontal slider controls the volume between the left and right channels.
3	**Recording volume slider**	Drag this slider down to decrease the recording volume; drag up to increase the recording volume. The tool-tip reveals the percentage number from 1 to 100 in terms of the full scale level.
4	**Recording Selector button**	Click this button to select the path/source you are going to record. Please note that the recording function on Windows is a one-path selector. So, you can select only one default recording source at a time. You may have to restart the recorder program if you switch to a different source. (Note: On Vista, some application programs may allow you to select the recording device/path in the recording programs themselves.)
5	**S/PDIF-In Advanced Setting**	Click this button to open the advanced settings for the S/PDIF-In:  Enabling “Validity Check” will check out the PCM audio validity bit of S/PDIF input stream to prevent recording or monitoring non-PCM/not recordable audio (such as AC3, etc.), which will become unrecognizable sounds from your speakers.

(continued on the next page)

6	**Monitoring button**	Click this button to monitor and loopback recording audio to outputs (PC speakers). Therefore, the recording volume will influence the monitoring signals from speaker outputs. The audio will be mixed into the streams you are playing out from your PC and all DSP effects will be applied to the source, too. A typical benefit is to apply Dolby Pro-Logic IIx 7.1-ch spreading for your TV audio, CD, MP3, or stereo game console audio from Wii, Xbox, PS2/PS3/PSP, etc. To apply Dolby Virtual Speaker is suitable for two-speaker environment. **NOTE**: When the monitoring function is enabled, audio output from HDMI output is disabled.
7	**Source / path name**	This shows the source name for each volume control slider, including: S/PDIF-In: S/PDIF digital input source Mix: Stereo Mix which will record all analog inputs and digital wave audio you are playing on PC Aux: recording from Aux-In for typically TV-tuner card audio or other sound sources Line-In: recording from Line-in jack for external audio devices WAVE: recording from digital wave audio you are playing on PC (Note: Windows Vista doesn't support WAVE recording.)
8	**Microphone-In advanced setting**	Click this button to open the advanced settings for the Microphone-In: Enabling "Microphone Boost" will increase a volume gain to boost microphone input signals. If you connect your microphone to the front panel audio module, enable "Front Panel Microphone". For typical low-cost PC microphone, it's recommended to enable this function.
9	**Reset**	Click to reset all volume controls to the default settings.

6.4 Effects

6.4.1 Environment Effects

Environment effects can be used to create realistic listening experiences that mimic different environments. There are a total of 27 environment options, which can be applied to all 2D sound sources, like music.

No	Item	Description
1	**Default environments**	These four buttons activate Bathroom, Concert hall, Underwater, and Music Pub environments, respectively.
2	**More options**	Clicking this button will apply the environment effect that you select from the pull-down menu on the right side. There are another 23 options in this menu.
3	**Environment size**	There are three size settings for each environment: Large, Medium, and Small.

6.4.2 10-Band Equalizer

The equalizer can modify the audio output for different frequencies, and be used to compensate for deficiencies in your speakers/systems. There are 12 default patterns and you can also make your own settings.

No	Item	Description
1	**Default equalizer options**	There are 12 available equalizer patterns. Click one to apply it.
2	**Equalier slider**	Adjust the gain for each band (30~16KHz)
3	**User Defined**	You can click this button to apply your own defined parameters saved in the pull-down menu.
4	**Save name**	Key in a name for your own “User Defined” equalizer setting
5	**Add / save**	Click this “+” button to save the parameters into User Defined list
6	**Delete**	Click this “–” button to delete the parameters from User Defined list

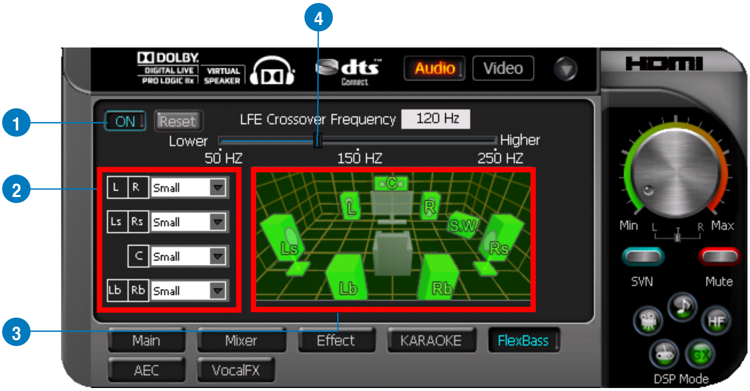
6.5 Karaoke

The Xonar HDAV 1.3 provides powerful features for Karaoke, including Key-Shifting, Vocal Cancellation, and Microphone Echo. Key-Shifting can change the pitch of Karaoke background music, and Vocal Cancellation can reduce the original vocal in songs and keep the music and symphony for karaoke.

No	Item	Description
1	On/Off	Click the switch to turn on or off the functions on this page.
2	Key-Shifting	Check the box to enable or disable the key shifting feature for music playback from 4 semitones below, to 4 semitones above.
3	Vocal Cancellation	Checkbox to enable or disable the vocal cancellation function and adjust the voice cancellation level from 0 to +100. +100 will eliminate most original vocals (default value is 50).
4	Mic Echo	Select the Mic Echo function and adjust the gain for echo signals (30~16KHz)
5	Reset	Reset all settings to the default.

6.6 FlexBass

FlexBass, an advanced bass management and enhancement mechanism, allows you to select each satellite speaker's type for optimal sound performance from the speakers. (Small: common speaker that cannot produce low frequencies; Large: wide-band speakers that can produce low frequencies well). It comes with an adjustable crossover frequency for the boundary of the bass signals. FlexBass will filter out the bass signals from small speaker channels and redirect them all to the subwoofer or Large speakers.



No	Item	Description
1	**On/Off**	Click this switch to turn on or off all functions on this FlexBass page.
2	**Small / Large speaker option**	Select the speaker type that you connected. If your speaker type cannot perform low-frequency signals (bass), select "Small" speaker type and Xonar HDAV 1.3 will filter out the bass signals and send them to the subwoofer channel. If those speakers are full-range, you can select the "Large" speaker type. Note: Usually, low-cost PC's 2-channel speakers are small-type speakers. Refer to the speaker's specification. If you have any questions, consult your speaker vendor. However, common 2.1 speakers with a subwoofer should be categorized as Large speakers because the subwoofer can redirect the bass signals inside the two channels to the subwoofer speaker automatically.
3	**Picture for Small/ Large speaker**	Colors for small/large speakers are different. Orange: large speakers Green: small speakers

4	**LFE Crossover Frequency**	Adjusts the cut-off frequency (50~250Hz) for LFE (low-frequency effects) signals. Xonar HDAV 1.3 will filter out the bass signals below the crossover frequency from small speaker channels and forward them to the subwoofer. The higher the crossover frequency, the more bass signals will be subtracted.

6.7 AEC (Acoustic Echo Cancellation)

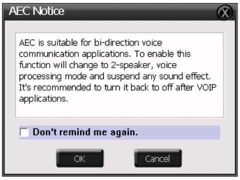
Xonar HDAV 1.3 provides advanced Acoustic Echo Cancellation (AEC) for best voice communication quality over your speakers. AEC technology can eliminate up-to-40dB speaker echo return and suppress noises into your microphone for easier conversation experience. AEC is an innovative feature to make Xonar HDAV 1.3 the best sound card choice for online chatting in VOIP applications (Skype, MSN, Google, QQ, etc.) or online gaming. AEC provides the following benefits to you:

- Reduces the voice acoustic echoes like speakerphone devices when others talk to you on line
- Minimizes the playback sound echoes into your microphone during gaming or music playback
- Effectively suppresses background or system noises into your microphone
- 32-bit floating point algorithm providing precisely adaptive echo cancellation performance up to 40dB
- Supports all VOIP applications and online games

To achieve the best performance of AEC function, the ideal system requirements are as follows:

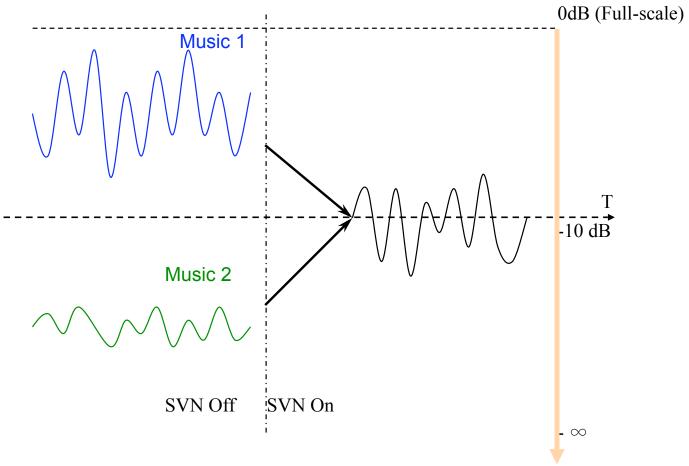
1. Speakers and microphone are low distortion (max. THD < 2%)
2. Flat frequency response between 300~4KHz
3. Use omni-direction electret microphone with >=40dB sensitivity
4. The microphone is more than 30cm far from PC's speakers (fix the distance) and do NOT turn your speakers too loud
5. Put your microphone 20~30cm away from you (fix the distance) and do NOT speak too close or too loud into the microphone to avoid signal clipping and distortion. Enable "microphone boost" on Xonar HDAV Center mixer to get proper input signal level.
6. It's suggested to disable original AEC function residing in some of the soft-phones or voice communication programs to get best performance from Xonar HDAV 1.3 card.

AEC function will be only suitable for bi-direction voice communication applications. The speaker type will be set as 2 speakers and special voice processing mode while AEC is applied (all audio effects will be suspended and those controls on audio center will be frozen.). After you finish the voice-over-IP applications, please remember to turn it off for normal high-fidelity audio playback mode.

No	Item	Description
1	**AEC**	Click to open the AEC function page.
2	**Enable AEC**	Click the checkbox to enable AEC function. An alert message will pop up:  This message implies that the speaker configuration will be set to 2 speakers and all sound effect processors will be suspended except AEC function. Click "OK" to accept it or "Cancel" if you want to enable it later. Checking "Don't remind me again" will not display this message again.

6.8 Smart Volume Normalization

Smart Volume NormalizationTM (SVN) automatically keeps all music or video/TV audio output at a constant level to reduce manual adjustment hassles inherent with sound sources of different loudness. It allows you to listen to various content, like MP3, TV program, DVD video and even games with consistent sound level. The following graph shows how different signals 1 & 2 will become the same level (for example, 10dB below full scale) after you turn on SVN. Please note that for lower volume music 2, it will become louder when you turn on SVN; and for higher volume music 1, it will become quieter.



No	Item	Description
1	**SVN On/Off**	Click this button to enable SVN. This button is outlined blue when active.
2	**SVN blue light**	When SVN is enabled, the master volume knob will be illuminated by a blue light. It will be lit red if the volume is muted.
3	**SVN display**	When SVN is enabled, “Smart Volume” will be lit up at the bottom of the volume meter and the volume meter will show the level.

6.9 DS3D GX and DSP Modes

Xonar HDAV 1.3 is introducing an innovative technology –DirectSound 3D Game Extensions v1.0 (DS3D GX 1.0)- to restore DirectSound 3D Hardware acceleration mode and its subsidiary EAX effects on Windows Vista for 3D games. Unlike some proprietary API like OpenAL, DS3D GX doesn't require games to support OpenAL API. All existing games compatible with Microsoft DirectX and DirectSound 2D/3D will be supported with DS3D GX technology. Before you start EAX and DS3D HW games, enable DS3D GX on the Xonar HDAV Center, and disable the function after the games.

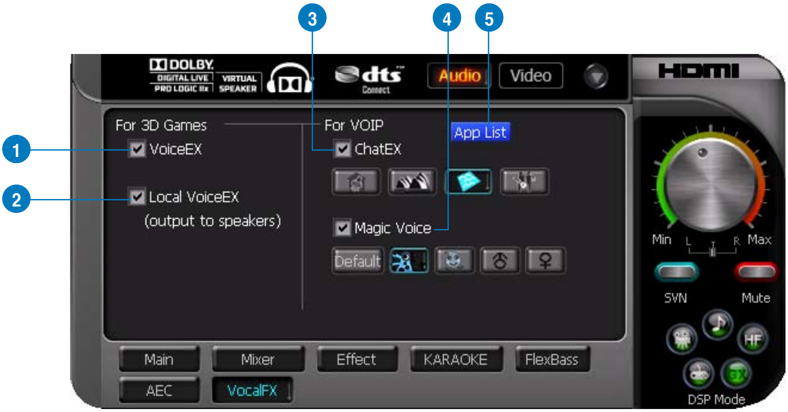
Supports latest DS3D GX 2.0 for gaming on Vista & XP
DS3D GX 2.0 not only revives EAX and DirectSound HW effects, but also allows you to run EAX HD 5.0 games on both XP and Vista. It provides the best compatibility with existing DirectX games. GX2.0 also adds innovative VocalFX voice effects for existing EAX games or VOIP applications.

Besides the abundant sound effects described above, the Xonar HDAV 1.3 also provides quick Digital Sound Processing modes which are configured for typical applications including Music, Movies, and Games over different output speaker types. In addition, Xonar HDAV 1.3 also offers a Hi-Fi mode for hi-fidelity playback without any effect processing to keep the original audio fidelity. Every time you turn on Hi-Fi mode, Xonar HDAV 1 will clear all sound effects. It's also recommended to use Hi-Fi mode for audio quality tests (using RMAA software or another machine-based measurement). Use the DSP mode button as the quick setup if you don't wish to know the details of the effect setup. (Note: no sound effects will be applied to high-definition 96KHz/192KHz content.)

No	Item	Description
1	GX Mode	DirectSound 3D Game Extensions mode to support EAX and DirectSound 3D Hardware extensions for lots of DirectX/ DirectSound3D games on Windows Vista.
2	Hi-Fi Mode	This mode is set for Hi-Fidelity playback, where all effects will be cleared to keep the original digital data and analog output quality as high as possible.
3	Music Mode	This mode is set for Music playback.
4	Movie Mode	This mode is set for DVD Movie playback.
5	Game Mode	This mode is set for Games.

6.10 VocalFX

VocalFX is an innovative voice processing technology to let your voice get into the realistic game landscape (VoiceEX) or to emulate the background scenes in online chat (ChatEX). It also allows you to change your voice pitch to disguise who you are (Magic Voice). These features dramatically increase the fun for voice communication on PC.



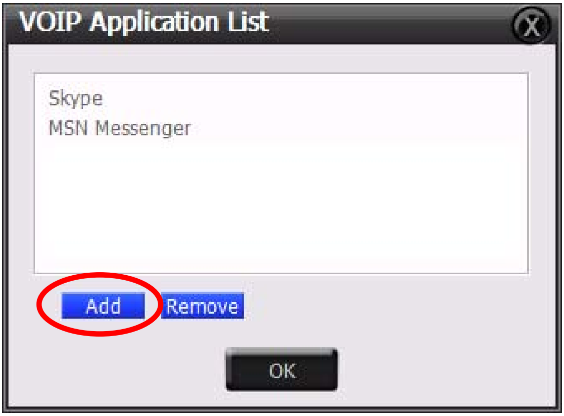
No	Item	Description
1	**VoiceEX**	It produces realistic and dynamic environmental reverberation for your voice in 3D gaming communication.
2	**Local VoiceEX**	It produces realistic and dynamic environmental reverberation for your voice in 3D gaming communication. (You can hear your voice form speakers)
3	**ChatEX**	It emulates different background environment effects when you chat online.
4	**Magic Voice**	Changes your voice pitch to different types for disguising your real voice or just for fun in online chatting.
5	**App List**	You can add VOIP application into VOIP application List.

For 3D Games

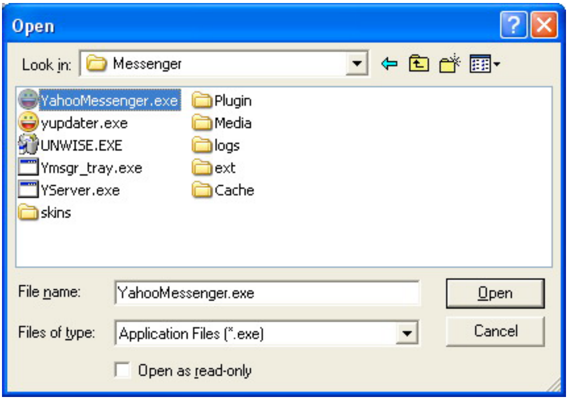
1. Check the check box of VoiceEX and Local VoiceEX.
2. Make sure you and your team member can talk to each other in the game.

For VOIP

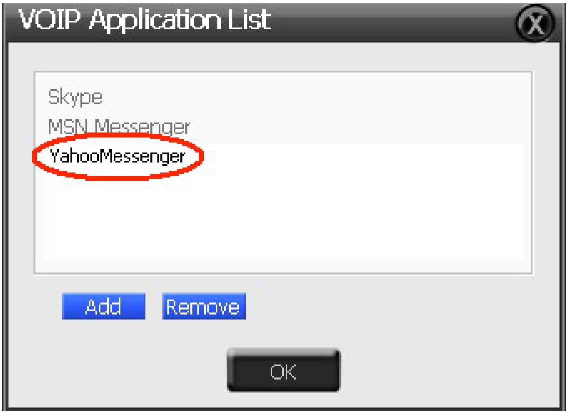
1. Press App List
2. If you don't see the VOIP application of yours in the list, press Add.(Make sure the Skype and MSN Messenger are the latest version)



3. Look for the application's location and Open it.

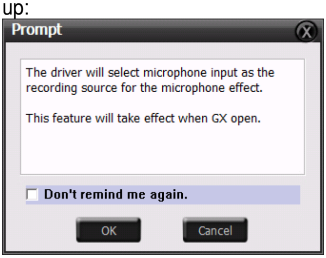


4. Your VOIP application has been added into list.



5. Check the check box of ChatEX and Magic Voice.
6. You can use ChatEX and Magic Voice when you chat online.

Click the checkbox to enable VocalFX function, then a prompt message will pop up:



This message implies the record device will be set to microphone. Make sure the GX function is enabled. Click “OK” to accept it, or “Cancel” if you want to enable it later. Check “Don’t remind me again” if you don’t want to see this message pop up next time.

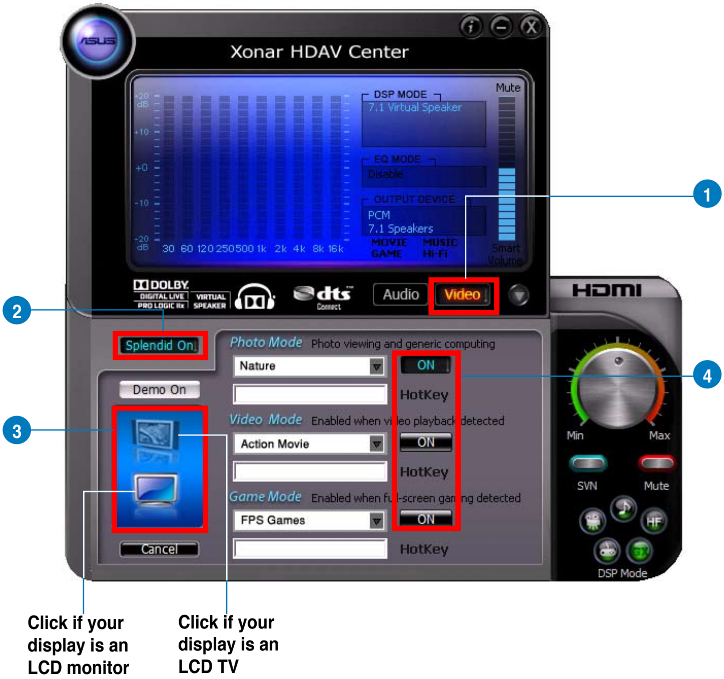
6.11 Video – Splendid HD

Splendid HD is a utility that upgrades the visual performance for your LCD monitor or LCD TV with the advanced HDMI (High-Definition Multimedia interface) output.

6.11.1 Activating Splendid HD

To use the Splendid HD:

1. Click the **Video** button on the Xonar HDAV Center.

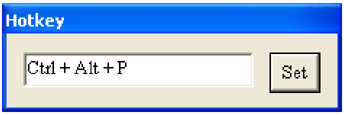


2. Click the **Splendid On** button on the Xonar HDAV Center; clicking this button again will disable this feature.
3. Click the **LCD monitor / LCD TV** icon depending on which display you use.
4. The Splendid HD provides three modes that allow you to change the configurations according to different viewing conditions, such as viewing photos, watching movies, and playing games. Click **ON / OFF** to enable or disable the mode you select.

5. You can also set hotkeys for each mode, which enables you to switch modes quickly. Follow the steps below to set a hotkey.

   a. Click the Hotkey textbox

 to display the following:



   b. Click on the Hotkey textbox then press desired keys. **Ctrl** and **Alt** keys are the default keys.

   c. Click **Set** to apply settings.

6.11.2 Photo Mode

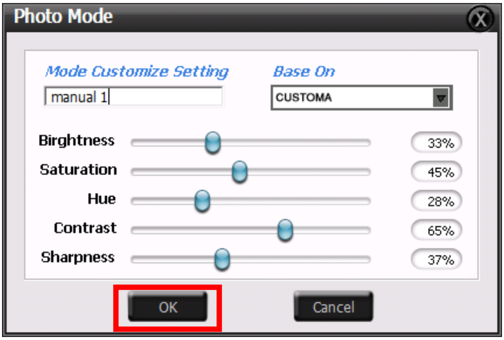
To enable the Photo Mode, click the corresponding **ON** button. The button is lighted up in green color when Photo Mode is on. Select desired settings from the two default color-enhanced settings: **Nature** and **Vivid**.

If you want to see the comparison between the original screen and the color-enhanced screen, click the **Demo On** button. When the demo starts, a vertical green line divides the screen. The left side of the green line is the original screen and the right side the color-enhanced screen. Click **Cancel** to stop scanning.

You can customize two more settings based on your needs.

To add customized settings, select **CustomA / CustomB** then click the **Custom** button.

From the customize settings screen, adjust the brightness, saturation, hue, contrast, and sharpness according to your desired settings and name your customized setting. Click **OK** when done.



6.11.3 Video Mode

To enable the Video Mode, click the corresponding **ON** button. The button is lighted up in green color when Video Mode is on. Select desired settings from the two default color-enhanced settings: **Action Movie** and **Theater Mode**.

You can customize two more settings based on your configuration. Follow the instructions in the **Photo Mode** section on how to create customized settings.

6.11.4 Game Mode

Your system must have the following two items installed before using Game Mode:

1. ASUS graphics card
2. ASUS GamerOSD utility.

To enable the Game Mode, click the corresponding **ON/OFF** button. The button displays **OFF** when Game Mode is on. Select desired settings from the two default color-enhanced settings: **FPS Games** (First Personal Shooting Game) and **RPG (**Role-Playing Game) **/RTS Games (**Real-Time Strategy Game).

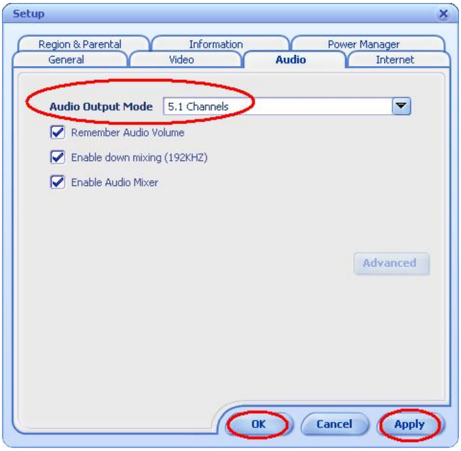
You can customize two more settings based on your needs. Follow the instructions in the **Photo Mode** section on how to create customized settings.

6.12 DVD/Blu-ray playback over DH/DVS/DDL/Multiple Analog Speakers

6.12.1 Under Windows XP

Dolby Headphone (Viertualized 5.1 surround sounds over stereo headphone)

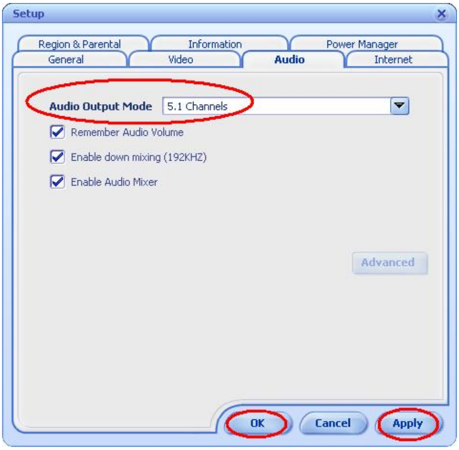
1. Open TotalMedia Theatre > Setup > Audio.
2. Select **5.1 Channels** in Audio Output Mode.
3. Press Apply first, and then press OK.



4. Open the Xonar HDAV Center.
5. Select **Headphone** in Analog Out.
6. Check **Dolby Headphone**.

Dolby Virtual Speaker (Virtualized 5.1 surround sounds over stereo speakers)

1. Open TotalMedia Theatre > Setup > Audio.
2. Select **5.1 Channels** in Audio Output Mode.
3. Press Apply first, and then press OK.



4. Open the Xonar HDAV Center.
5. Select **2 Speakers** in Analog Out.
6. Check **Dolby Virtual Speaker**.

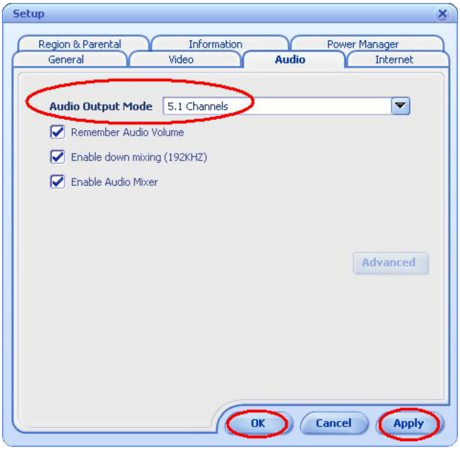
DVD/Blu-ray playback by SPDIF/HDMI (Dolby Digital/DTS digital audio pass-through)

1. Open TotalMedia Theatre > Setup > Audio.
2. Select **S/PDIF** in Audio Output Mode.
3. Press Apply first, and then press OK.

4. Open the Xonar HDAV Center
5. Enable **SPDIF Out**.

DVD/Blu-ray playback by SPDIF/HDMI (Add Sound effects w/ DDL encoding)

1. Open TotalMedia Theatre > Setup > Audio.
2. Select **5.1 Channels** in Audio Output Mode.
3. Press Apply first, and then press OK.

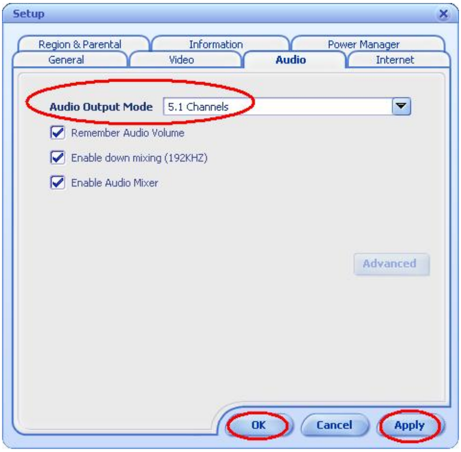


4. Open the Xonar HDAV Center.
5. Enable **SPDIF Out**.
6. Select **Dolby Digital Live** in SPDIF Out.
7. In this mode, you are able to adjust the DVD sound volume, your multi-speaker placement and surround soundfield virtually by 7.1 Virtual Speaker Shifter. You can also add environmental reverbs or EQ effect into the movie surround sounds. In a word, you can optimize the movies' sounds even over Dolby Digital output to your home theater.

6.12.2 Under Windows Vista

Dolby Headphone (Viertualized 5.1 surround sounds over stereo headphone)

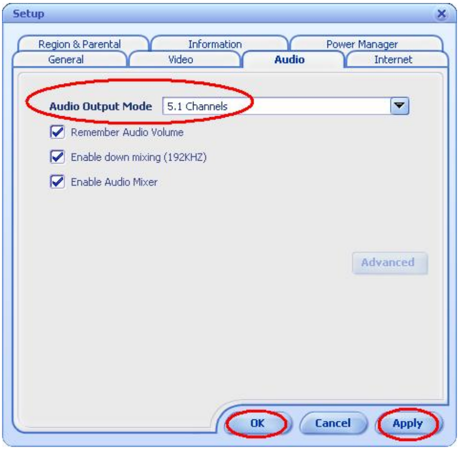
1. Open TotalMedia Theatre > Setup > Audio.
2. Select **5.1 Channels** in Audio Output Mode.
3. Press Apply first, and then press OK.



4. Open the Xonar HDAV Center.
5. Select 6 Channels in Audio Channel.
6. Select **Headphone** in Analog Out.
7. Check **Dolby Headphone**.

Dolby Virtual Speaker (Virtualized 5.1 surround sounds over stereo speakers)

1. Open TotalMedia Theatre > Setup > Audio.
2. Select **5.1 Channels** in Audio Output Mode.
3. Press Apply first, and then press OK.



4. Open the Xonar HDAV Center.
5. Select **6 Channels** in Audio Channel.
6. Select **2 Speakers** in Analog Out.
7. Check **Dolby Virtual Speaker**.

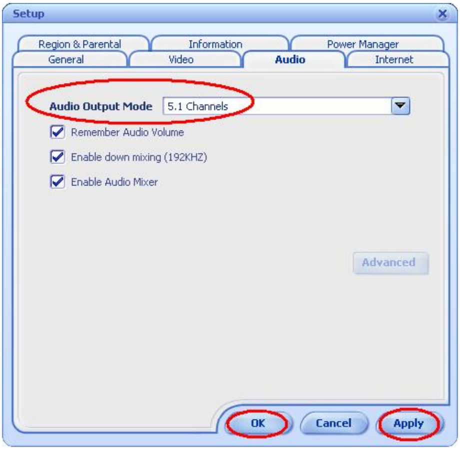
DVD/Blu-ray playback by SPDIF/HDMI (Dolby Digital/DTS digital audio pass-through)

1. Open TotalMedia Theatre > Setup > Audio.
2. Select **S/PDIF** in Audio Output Mode.
3. Press Apply first, and then press OK.

4. Open the Xonar HDAV Center
5. Enable **SPDIF Out**.

DVD/Blu-ray playback by SPDIF/HDMI (Add Sound effects w/ DDL encoding)

1. Open TotalMedia Theatre > Setup > Audio.
2. Select **5.1 Channels** in Audio Output Mode.
3. Press Apply first, and then press OK.



4. Open Xonar HDAV Center.
5. Select **6 Channels** in Audio Channel.
6. Enable **SPDIF Out**.
7. Select **Dolby Digital Live** in SPDIF Out.
8. In this mode, you are able to adjust the DVD sound volume, your multi-speaker placement and surround soundfield virtually by 7.1 Virtual Speaker Shifter. You can also add environmental reverbs or EQ effect into the movie surround sounds. In a word, you can optimize the movies' sounds even over Dolby Digital output to your home theater.

7. ASUS GamerOSD

ASUS GamerOSD allows you to share real-time gaming experience while playing full-screen games. Users can remotely monitor a live broadcast using the Internet Explorer.

7.1 Enabling ASUS GamerOSD

Enable ASUS GamerOSD after installing the utility from the support CD.

To launch ASUS GamerOSD:

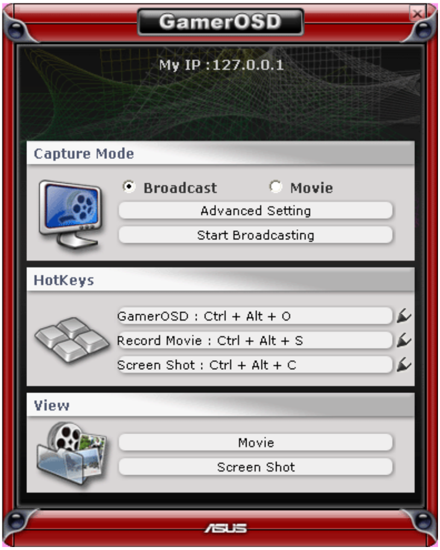
1. Right click on an empty space of the Windows® desktop and select **Properties**. From the Display Properties dialog box, select the **Settings** tab then click **Advanced**.
2. Select the **ASUS** tab then **ASUS OSD** to display the properties window.
3. Click the **Enable ASUS OSD** check box.

4. Click on the Hotkey textbox then press desired keys. **Ctrl** and **Alt** keys are the default keys.
5. Click **Apply** to apply settings or click **OK** to apply settings then exit. Click **Cancel** if you want to discard settings and exit.

7.2 Setting ASUS GamerOSD

After installing and enabling ASUS GamerOSD, click on the GamerOSD icon on the Windows® taskbar and select **Setting** to display the setup menu. If you exit the utility, go to **Start > Programs > ASUS > GamerOSD AP > GamerOSD** to relaunch the program.

The GamerOSD setup menu is as follows:



Capture Mode

Broadcast
Select to have live broadcasts of the games you are playing on the Internet.

Movie
Select to record games and save the videos.

Advanced Setting
Allows yout to set the Video Capture Size, Video Capture Frame Rate, Sound Capture Device, Broadcast Port, and Movie Format.

Start Broadcasting
Click to start live broadcasts of games. When selected, the broadcasting icon appears on the Windows® taskbar. This item is disabled when you select Movie.

For detailed instructions on how to broadcast games and the related Internet Explorer security settings, refer to section **7.4 Broadcasting games with ASUS GamerOSD**.

HotKeys

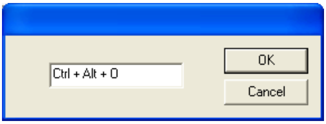
Allows you to set the hotkeys to launch GamerOSD in full-screen games, to start/ stop recording games, and to capture game screens.

The default hotkeys are:

- GamerOSD: **Ctrl + Alt + O**
- Record Movie: **Ctrl + Alt + S**
- Screen Shot: **Ctrl + Alt + C**

To set a hotkey:

1. Click the pencil icon to display the hotkey textbox.
2. Click on the hotkey textbox then press desired keys. **Ctrl** and **Alt** keys are the default keys.
3. Click **OK** to apply or click **Cancel** to discard settings.



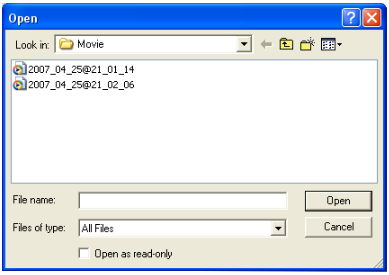
View

Movie

Click to open the Movie folder where the recorded games are saved. Double-click an item to play.

Screen Shot

Click to open the ScreenShot folder where the captured images are saved. Double-click an item to view.



The Movie and Screenshot folders are stored in **\\My Documents\ASUS\GamerOSD**.

7.3 Using ASUS GamerOSD

In a full-screen game, launch ASUS GamerOSD using the GamerOSD hotkeys.

7.3.1 3D Display Setting

Show FPS

Allows you to show/hide FPS on your monitor and choose where to display FPS. Configuration options: OFF, L/T (left top), R/T (right top), R/B (right bottom), L/B (left bottom).

> Even if you choose not to display FPS on your monitor, you can see the FPS from the OC GEAR screen.

FPS Text Color

Changes the text color of FPS.
Configuration options: R (red), G (green), B (blue), Y (yellow), W (white).

GPU Speed

Allows you to adjust the GPU speed.

Enable Display Adjustment

Click the right arrow key to enable and the left arrow key to disable this function. The following three items become configurable when you enable Display Adjustment.

Gamma

Adjusts the current Gamma value of the game.

Brightness

Adjusts the current brightness of the game.

Contrast

Adjusts the current contrast of the game.

7.3.2 Video Capturing

The items in this menu are mostly controlled by the GamerOSD setup menu. Refer to section **7.2 Setting ASUS GamerOSD** for further informaiton.

Capture Mode
Displays Movie if you select Movie in the GamerOSD setup menu. This item shows Broadcast if you previously selected **Broadcast**.

Start/Stop
When Movie mode is selected, this item shows the hotkeys for starting/ stopping recording games. In Broadcast mode, this item shows N/A.

Current Client(s)
Shows 0 in Movie mode. In Broadcast mode, this item shows the number of connected viewers watching your broadcast.

Capture Size
Shows the resolution of the captured videos. This item is set in Advanced Setting in the GamerOSD setup menu.

Capture Rate

Shows the frame rate of the captured videos. This item is set in Advanced Setting of the GamerOSD setup menu.

Start Capturing

In Movie mode, press the right/left arrow key or the set hotkeys to start/stop recording games. A red blinking dot appears on the bottom left corner of your screen when recording. The recorded videos are automatically saved in the Movie folder and named by date.

In Broadcast mode, press the right/left arrow key to start/stop broadcasting games.

For detailed instructions on how to broadcast games and the related Internet Explorer security settings, refer to section **7.4 Broadcasting games with ASUS GamerOSD**.

7.3.3 Screenshots

Screenshot Mode

Allows you to shift the image capturing mode between Single and Multiple.

Files Format

Allows you to select the image files format.
Configuration options: bmp, gif, jpg.

The following two items are enabled when you select Multiple screenshot mode.

Capture Numbers

Allows you to set the number of screenshots captured consecutively.
Configuration options: 3, 4, – 9, 10.

Capture Interval (sec)

Allows you to set the capture interval in seconds.
Configuration options: 1, 2, – 5.

Hot Key

Shows the hotkeys for capturing screens. Press the hotkeys to capture screens. The images are automatically saved in the ScreenShot folder and named by date.

7.4 Broadcasting games with ASUS GamerOSD

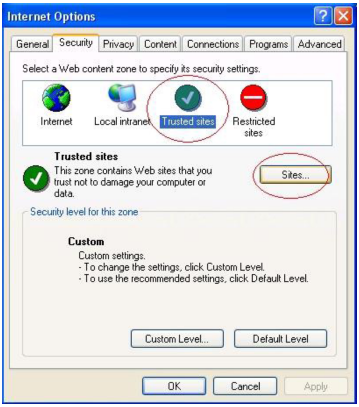
ASUS GamerOSD allows you to broadcast the games you are playing live on the Internet. Before broadcasting, you need to configure your Internet Explorer security options.

7.4.1 Internet Explorer browser setup

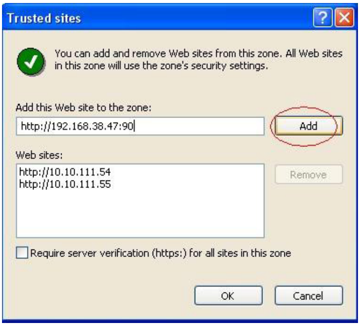
To configure your IE browser:

1. Launch Internet Explorer.
2. Go to **Tools > Internet Options**.

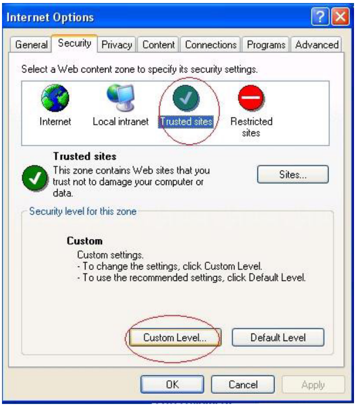
3. From the Internet Options dialog box, select the **Security** tab then click the **Trusted Sites** icon.
4. Click **Sites** to display the Trusted sites window.



5. Key in the Internet Protocol (IP) of the broadcast host on the text box then click **Add**.
6. Click **OK** when done or **Cancel** to discard changes.



7. Click **Custom Level** to display the Security Settings window.

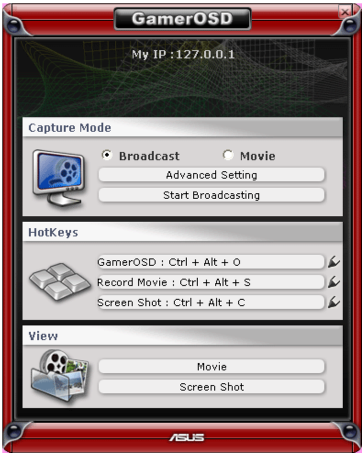


8. Enable all items then click **OK**.
9. Click **OK** to exit the Internet Options dialog box.

7.4.2 GamerOSD broadcast setup

To enable broadcasting in GamerOSD:

1. Click on the GamerOSD icon on the Windows® taskbar and select **Setting** to display the setup menu.
2. Select **Broadcast**. Click **Advanced Setting** to configure related settings and click **Start Broadcasting**. A broadcasting icon appears on the Windows® taskbar.



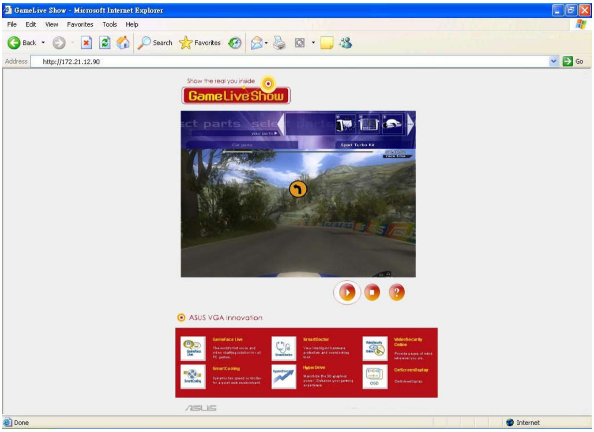
3. Start a full-screen game. Launch the GamerOSD using the hotkeys.
4. Press the Page Up/Down key to go to the **Video Capturing** menu and use the Up/Down arrow key to highlight **Start Capturing**.
5. Press the right arrow key to start broadcasting.

7.4.3 Watching broadcasts

Remote clients can watch the game you're playing via live broadcast on the Internet.

To watch broadcasts:

1. From the IE Address box, key in the IP address of the computer that is broadcasting a game.



2. Click the play button to start preview.

8. RMAA Test Guide

The Xonar HDAV 1.3 driver CD includes RightMark Audio Analyzer (RMAA), a popular software intended for testing the quality of audio equipment, be it a sound card, portable MP3 player, consumer CD/DVD player, or a speaker system. The measurements are conducted by playing and recording test signals, and using frequency analysis algorithms. The following provides a step-by-step loop-back test guide for your Xonar HDAV 1.3 card.

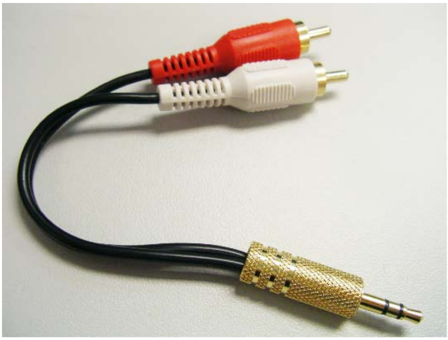
8.1 Setting Up Xonar HDAV 1.3 card

Open the Xonar HDAV Center. Use the settings below:

1. Select the sample rate you will be using with RMAA (here we set 48KHz for testing 48KHz/24bit signals).
2. Set analog output to 2-speaker mode (to get rid of any channel processing over RMAA stereo signals in the driver)
3. Turn off all sound effects including Dolby, DTS, 7.1 speaker shifter, EQ, Environment, etc. A quick way to do so is to enable the "Hi-Fi mode" button in the Xonar HDAV Center.

4. Go to the Mixer Recording page and select “Line In” as the recording source. Click “Reset” to make sure the recording volume is on the default highest level (0dB). This allows you to get realistic output and input quality ratings for the Xonar HDAV 1.3 card.

You may also choose to use an external 3.5mm line cable as follows (as short as possible) to connect the Front-Out jack to the Line-In jack for loop-back testing. In that case, select “Line In” as the recording source on the mixer page.

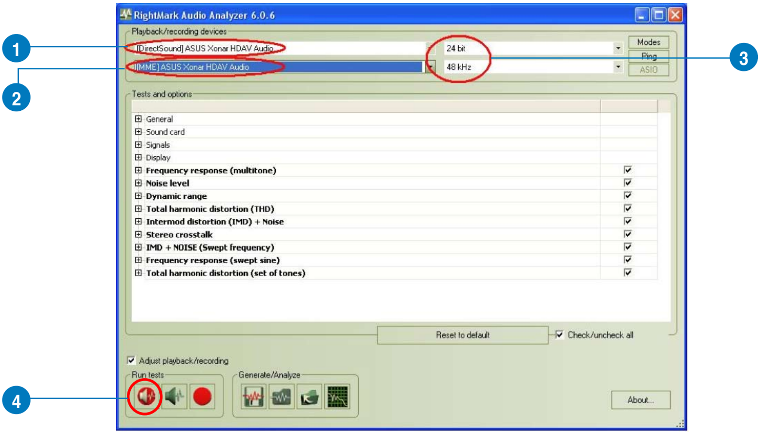


5. Click “Reset” on the playback volume mixer page to keep the volume setting on default.
6. Turn the master volume to the MAX level (0dB)

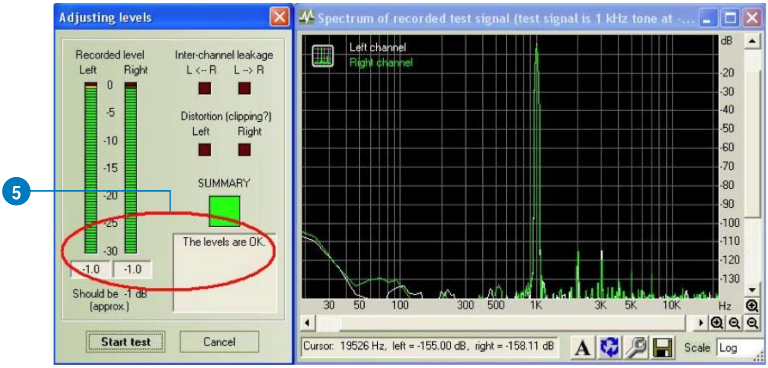
8.2 Configuration and Test with RMAA

Start RMAA and follow the setup procedure below.

1. Select playback devices as “[DirectSound] ASUS Xonar HDAV Audio”. (As Windows MME mode does not support high-resolution 24bit audio playback and the data may be manipulated by Windows, the real hardware quality can not be measured properly.)
2. Select recording devices as “[MME] ASUS Xonar HDAV Audio”.
3. Select 24bit and 48KHz for the test signals. (If you change the format here, remember to go back to set the same sample rate output in the Xonar HDAV Center)
4. Click the loop-back mode test button .

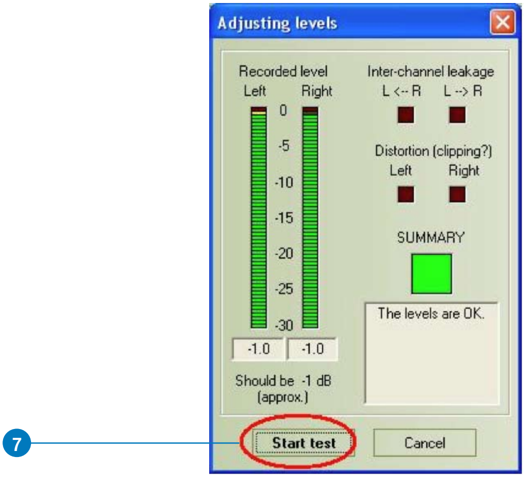


5. Check if the levels shown in the Adjusting level window are OK (the level meter will be green).

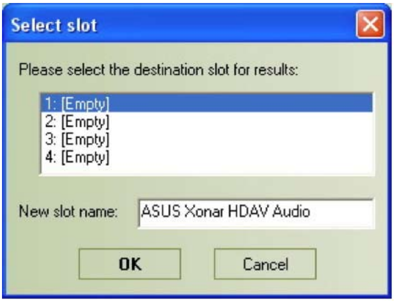


6. If the recording volume level is not high enough, check and make sure the WAVE and Master Volume have been at the maximum level; instead, if the recording volume level is too high, lower the WAVE and Master volumes gradually until the level is ok.

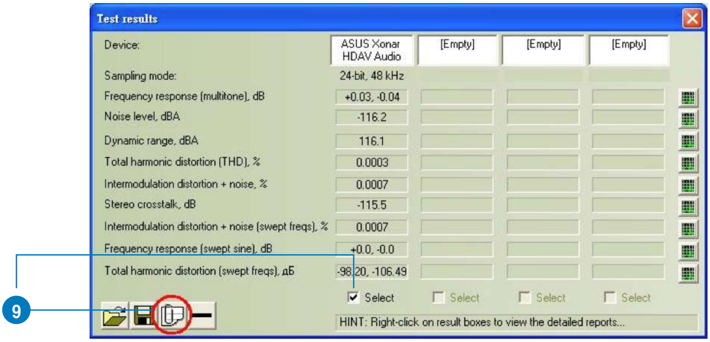
7. Begin the test by clicking the “Start test” button. If you cannot get the level to be “OK” after the previous step, click “Start test” anyways and proceed.



8. Enter “ASUS Xonar HDAV Audio” in the New slot name and select one Empty slot. Click “OK” when done.



9. RMAA will pop up the Test results window. You can click the “Select” checkbox and click to “Make html report”.



10. Check and key in the report name/options as follows and then click “OK”

8.3 RMAA Testing Results

Open the html file you created and saved in the test above, and it will display the report with both data and plots in your browser. The following report is a sample and you can see how high-fidelity and crystal-clean the Xonar HDAV 1.3 card is for both output and input (one of the world's finest sound cards, it has higher quality than most CE devices.) You can also try testing the performance for other sample rates and bit-depths with the same procedure.

8.4 ASUS Xonar HDAV RightMark Audio Analyzer test

Testing chain: External loopback (line-out - line-in)

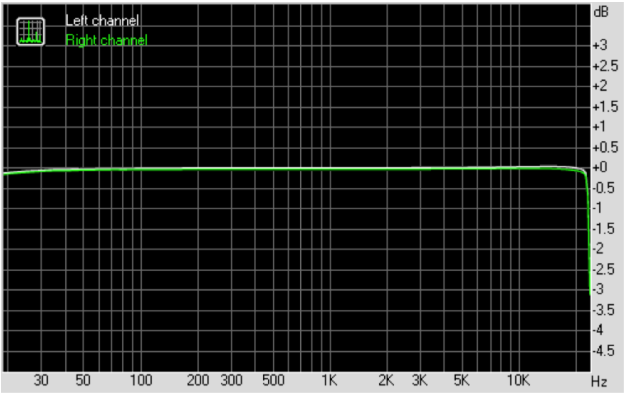
Sampling mode: 24-bit, 48 kHz

Summary

Frequency response (from 40 Hz to 15 kHz), dB:	+0.03, -0.04	Excellent
Noise level, dB (A):	-116.2	Excellent
Dynamic range, dB (A):	116.1	Excellent
THD, %	0.0003	Excellent
THD + Noise, dB (A)	-103.9	Excellent
IMD + Noise, %:	0.0007	Excellent
Stereo crosstalk, dB:	-115.5	Excellent
IMD at 10 kHz, %:	0.0007	Excellent
General performance		**Excellent**

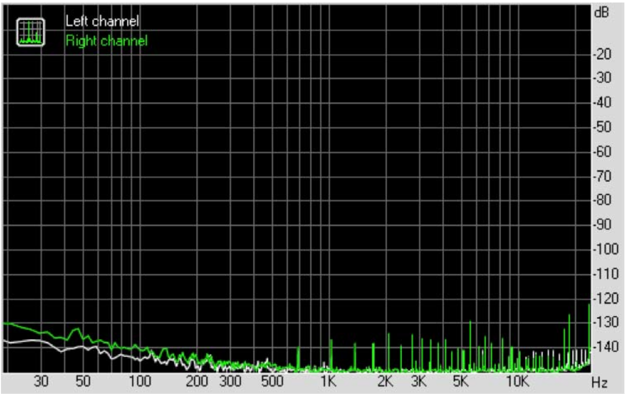
General performance: Excellent

Frequency response



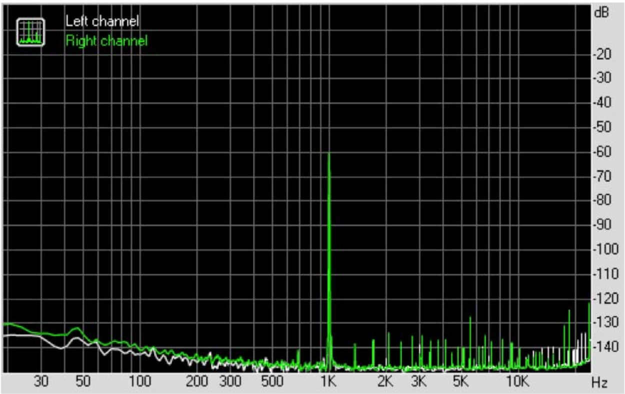
Frequency range	Response
From 20 Hz to 20 kHz, dB	-0.12, +0.03
From 40 Hz to 15 kHz, dB	-0.04, +0.03

Noise level



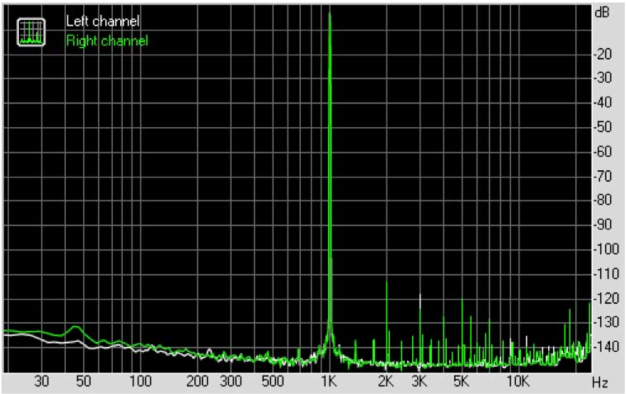
Parameter	Left	Right
RMS power, dB:	-115.0	-114.3
RMS power (A-weighted), dB:	-116.5	-115.9
Peak level, dB FS:	-90.3	-89.8
DC offset, %:	-0.00	-0.00

Dynamic range



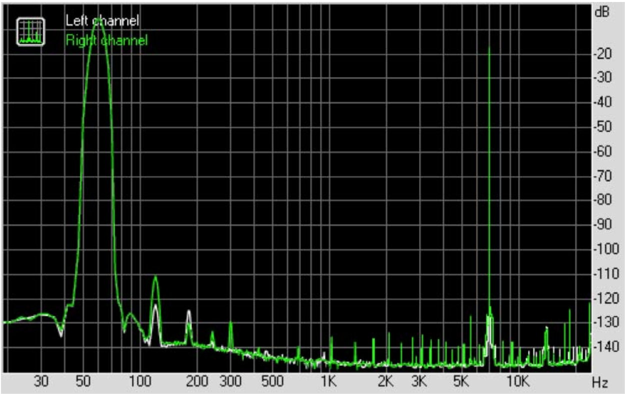
Parameter	Left	Right
Dynamic range, dB:	+115.1	+114.2
Dynamic range (A-weighted), dB:	+116.5	+115.6
DC offset, %	-0.00	-0.00

THD + Noise (at -3 dB FS)



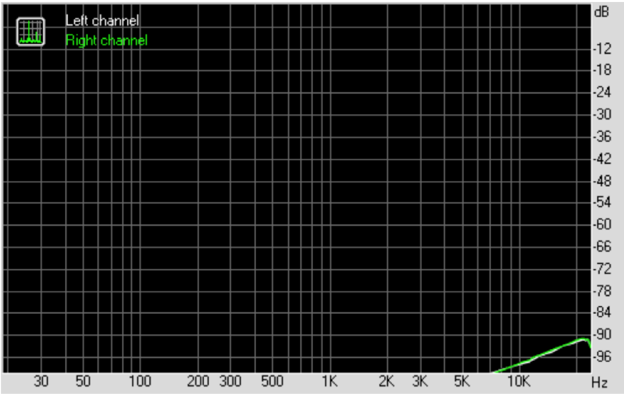
Parameter	Left	Right
THD, %:	+0.0002	+0.0004
THD + Noise, %:	+0.0006	+0.0006
THD + Noise (A-weighted), %:	+0.0006	+0.0007

Intermodulation distortion



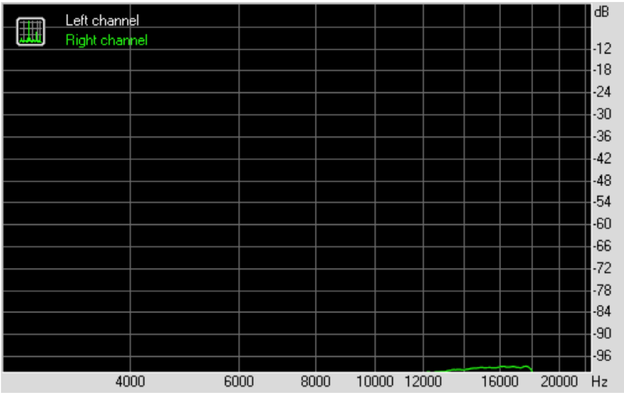
Parameter	Left	Right
IMD + Noise, %:	+0.0006	+0.0008
IMD + Noise (A-weighted), %:	+0.0004	+0.0005

Stereo crosstalk



Parameter	Left	Right
Crosstalk at 100 Hz, dB	-112	-110
Crosstalk at 1000 Hz, dB	-115	-114
Crosstalk at 10000 Hz, dB	-97	-97

IMD (swept tones)



Parameter	Left	Right
IMD + Noise at 5000 Hz,	0.0006	0.0007
IMD + Noise at 10000 Hz,	0.0005	0.0009
IMD + Noise at 15000 Hz,	0.0005	0.0011

***This report was generated by RightMark Audio Analyzer 6.0.6**

9. Troubleshooting and FAQs

[Troubleshooting]

The audio card driver could not be installed on my PC.

Instructions:

1. Make sure that you have properly plugged the audio card in the PCI Express slot on your motherboard.
2. Check that the Windows hardware device manager has discovered a multimedia audio device. If no device is found, please try scanning for new hardware.
3. Try soft reboot (restart) your Windows.
4. Remove the card, plug it into another PCI Express slot, and try again.

I couldn't find the Xonar HDAV Center

Instructions:

1. Make sure you have installed the driver
2. Find the Xonar HDAV Center icon in the system tray on the bottom right-hand corner of the screen. Double click the icon to open the Xonar HDAV Center utility..

3. If the icon could not be found in the system tray, go to the Windows Control Panel and double click the "Xonar HDAV Center" icon to make it visible in the system tray again.
4. After the driver installation is complete, it's recommended that you reboot your computer to complete the setup. If the icon still doesn't appear, please try installing the driver package again.

I can't hear any sound from my analog speakers

Instructions:

1. Xonar HDAV 1.3 card needs the power cable to supply addition power in addition to the basic PCI Express bus power. Please double check you have plugged the small 4-pin power plug onto Xonar HDAV 1.3 power connector. If you did not plug the internal power, Xonar HDAV Center will remind you a warning message and won't allow your operation when you double click Xonar HDAV Center icon in the system tray.
2. Ensure that you have connected speakers properly and have powered on your speakers
3. Ensure that the device master volume or the software player has NOT been muted on the Xonar HDAV Center

4. If you are using Dolby Digital Live or DTS Interactive encoders through the S/PDIF output, the analog output will be muted to get rid of the interference between your digital speaker system and analog speakers or headphones. Check if this is the case.
5. Try restart your Windows.

I can't hear any sound from the S/PDIF output

Instructions:

1. Ensure that you have enabled S/PDIF output in the Audio Center GUI (Main page)
2. Ensure that you are connecting the correct S/PDIF output jack on the card to the decoder's (AV receiver) S/PDIF input jack
3. You may need to select the correct input and mode of your decoder or AV receiver. For Dolby Digital or DTS output, you may have to double check that the AV receiver is in that decoding mode.
4. If you are using 192KHz PCM output, please make sure your decoder can support 192KHz decoding. Try changing it to 44.1K or 48KHz first.

I can't hear audio input (Mic, Line-in, etc.) from my speakers

Instructions:

1. Go to the mixer recording page in the Audio Center and select the correct input as the recording source (Xonar HDAV 1.3 uses high-quality 118dB digital recording and monitoring to route the input signal through to the output.) If you are using Windows Vista, please also go to system audio control panel to see the current default recording/input device is right.
2. Remember to turn on the digital monitoring button for that recording source.

I can't hear the TV tuner audio from my speakers

Instructions:

1. If you are using a traditional TV tuner card which has analog audio output, please connect it to the Aux-In header on the audio card
2. Select Aux-In as the recording source and remember to turn on the digital monitoring button on the recording mixer page
3. If you are using a TV tuner card which has digital audio output instead of analog, please check that the sound is not muted and whether other applications can play sound out. If you still have problem, please read the TV tuner card's software user guide.

I found no sound effects when playing 96K or 192KHz sound sources.

Instructions:

1. Currently Xonar HDAV 1.3 effects including Dolby/DTS support common 44.1K, 48KHz sound sources processing and will assure high-definition audio (96K/192KHz) in hi-fidelity playback. This is also usually the behavior that professional audiophiles and musicians prefer.
2. If you still want to have the effects, you can use some editing software (Ableton Live, Cakewalk, CoolEdit, Soundforge, etc.) to convert the sounds into 48KHz files.
3. Please note that the frequency meter on Xonar HDAV Center panel will not take effect either when the playback source is 96KHz or 192KHz sample rate to prevent any processing distortion.

[FAQs]

Q1: Does the Xonar HDAV 1.3 support Windows Vista?

Answer:

Yes, the Xonar HDAV 1.3 driver package does support Windows Vista 32/64 bit and most key features are available. In addition, Xonar HDAV 1.3 supports unique DS3D GX 2.0 on Windows Vista, which can recover DirectSound 3D hardware and EAX gaming sound effects on Vista for a lot of existing DirectX games.

Q2: Why does the Xonar HDAV 1.3 support Dolby and DTS technologies?

Answer:

Dolby & DTS are the ONLY brands and technologies recognized by the CE industry and available on a wide range of audio equipment. Xonar includes these features to make your PC a powerful media and entertainment center.

Q3: Why is Xonar HDAV 1.3 the best audio card for HTPC and multi-channel speakers?

Answer:

The Xonar HDAV 1.3 supports Dolby Digital Live and DTS Connect, which allow a single digital connection to your AV receiver to carry Dolby Digtial and DTS 5.1 audio. In addition, Xonar HDAV 1.3 also provides Dolby Pro-Logic IIx and DTS Neo:PC to upmix TV and other music to multi-channel surround sound in Home Theater environments. Xonar HDAV 1.3 also has Ultra High Fidelity SNR120dB on ALL 7.1 channel analog output at 192K/24bit, which is the best quality consumer audio card in the world. Therefore, it's also the best card to deliver the high quality audio through an analog connection to your home theater system or high-end multi-channel speakers.

Q4: Does the Xonar HDAV 1.3 support EAX on Vista?

Answer:

Yes, Xonar HDAV 1.3 can support EAX2.0 not only on Windows XP but also on Vista through innovative DirectSound3D Game EXtensions v1.0 (DS3D GX 1.0) technology.

Q5: Why do I need Dolby and DTS for PC games?

Answer:

1. Dolby Digital, Pro-Logic IIx, and DTS are available on the latest game consoles, like XBOX360, PS3, and Wii. Dolby and DTS can provide the best gaming sound experience and compatibility with home theater or TV systems.
2. Dolby Headphone and Dolby Virtual Speaker are the best 3D sound positioning, spatial modeling and 5.1-channel virtualization technology for regular stereo headphones and speakers

Q6: What's the most important benefit of the Xonar HDAV 1.3 for musicians?
Answer:

1. Ultimate Fidelity: Xonar HDAV 1.3 has the highest quality of audio in/out for the cleanest sound production
2. Duplex HD: Supports audio sampling rates up to 24bit/192KHz for all inputs and outputs
3. ASIO 2.0: Xonar HDAV 1.3 includes an ASIO 2.0 driver for low-latency, low-distortion music creation application

Q7: What's the application of "S/PDIF in loopback"?

Answer:

"SPDIF in loopback" is the process of looping back the sound card's S/PDIF digital input signal directly to the S/PDIF output. It's useful mainly for two purposes:

- transforming electrical signals from coaxial cable to a fiber optical cable, or vice versa.
- using the PC as a SPDIF bridge (typically as a media center): for example, connect other devices like DVD players to the Xonar HDAV 1.3's S/PDIF input and then connect its SPDIF output to an AV receiver or decoder. When you would like to send the player device's audio to the AV receiver, you need to have the Xonar sound card's "S/PDIF in loopback" enabled to redirect the player's input signal to output to the AV receiver.

Since "SPDIF In Loopback" is the hardware's high-fidelity pass-through path, not all sound effects will be applied to the signals.

Q8: Will PCM sound output through S/PDIF be just 2 channels even with different analog output channels?

Answer:

The S/PDIF protocol specification (IEC-60958) can only carry 2-channel PCM data or non-PCM AC3/DTS data. So, when a user selects PCM output for S/PDIF, the Xonar sound card will always deliver 2 channel PCM data through the S/PDIF output port. For attaining 5.1 channel surround sounds, you can select Dolby Digital Live or DTS Interactive encoding output from the S/PDIF out menu, which will allow the Xonar HDAV 1.3 to deliver 5.1 surround sound for games, DVD movies, and even stereo music.